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MONTEREY, CALIFORNIA

THESIS

NAVY DENTAL CORPS CONTRACT OR UNIFORM:
STUDY OF FACTORS INFLUENCING BUSINESS CASE ANALYSES

by

Richard C. Stacey

March 2006

Thesis Advisors: Raymond E. Franck
Second Reader: DeAnn Farr

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13. ABSTRACT (maximum 200 words)

This thesis analyzed costs and benefits between the recruiting of active duty dentists and the proposed alternative of contracting them instead. Despite aggressive efforts to improve Dental Corps recruitment and retention, the annual loss rate has steadily increased. This has forced the Dental Corps into using alternative programs such as the Health Professions Scholarship Program (HPSP) and the Financial Assistance Program (FAP) in addition to the accession programs already being funded. Also, there are various recruiting costs along with the accession bonus that costs the Navy over $90,000 per dentist recruited. The scope of this thesis included, but was not be limited to: (1) a review of the current structure of pay for active duty Endodontists by referencing Additional Special Pay (ASP), Variable Special Pay (VSP), Dental Officer Multiyear Retention Bonus (DOMRB) and the Board Certification Pay (BCP) that dentists receive while serving on active duty (2) and a summary of private sector pay and incentives for dentists in private practice. The thesis also analyzed the differences between the two with a Cost-Benefit Analysis (CBA) model. The completed research found savings in cost for contracting already licensed and trained Endodontists in place of recruiting a general dentist and training them to become an Endodontist over the 10 year period as composed in the analysis. In addition, a steady-state model verified the CBA and showed savings in cost per year as well. Each model shows significant savings when contracting Endodontists in our shore based MTFs. Furthermore, to mitigate shortages, this research proposes to concentrate resources on military essential competencies and contracting workload for non-military essential functions, such as Endodontists. Note that Endodontists were chosen because they are one of the larger non-essential specialties with billet inventories above the Operational Support Algorithm (OSA).

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NAVY DENTAL CORPS CONTRACT OR UNIFORM:
STUDY OF FACTORS INFLUENCING BUSINESS CASE ANALYSES

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Submitted in partial fulfillment of the
requirements for the degree of

MASTER OF BUSINESS ADMINISTRATION

from the

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ABSTRACT

This thesis analyzed costs and benefits between the recruiting of active duty dentists and the proposed alternative of contracting them instead. Despite aggressive efforts to improve Dental Corps recruitment and retention, the annual loss rate has steadily increased. This has forced the Dental Corps into using alternative programs such as the Health Professions Scholarship Program (HPSP) and the Financial Assistance Program (FAP) in addition to the accession programs already being funded. Also, there are various recruiting costs along with the accession bonus that costs the Navy over $90,000 per dentist recruited. The scope of this thesis included, but was not be limited to: (1) a review of the current structure of pay for active duty Endodontists by referencing Additional Special Pay (ASP), Variable Special Pay (VSP), Dental Officer Multiyear Retention Bonus (DOMRB) and the Board Certification Pay (BCP) that dentists receive while serving on active duty (2) and a summary of private sector pay and incentives for dentists in private practice. The thesis also analyzed the differences between the two with a Cost-Benefit Analysis (CBA) model. The completed research found savings in cost for contracting already licensed and trained Endodontists in place of recruiting a general dentist and training them to become an Endodontist over the 10 year period as composed in the analysis. In addition, a steady-state model verified the CBA and showed savings in cost per year as well. Each model shows significant savings when contracting Endodontists in our shore based MTFs. Furthermore, to mitigate shortages, this research proposes to concentrate resources on military essential competencies and contracting workload for non-military essential functions, such as Endodontists. Note that Endodontists were chosen because they are one of the larger non-essential specialties with billet inventories above the Operational Support Algorithm (OSA).

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EXECUTIVE SUMMARY

The United States Navy Dental Corps is having difficulty recruiting dentists and retaining the junior and mid-grade Dental Corps Officers. Despite aggressive efforts to improve Dental Corps recruitment and retention, the annual loss rate has increased from 8.3% in 2003 to 12.9% for 2005. In addition, the declining officer retention rates have negatively impacted applications for residency training programs, which have dropped 18% over the last five years. The Navy relies heavily on this group of officers to fill operational billets at sea and in support of the United States Marine Corps.

The factors indicated above have forced the Dental Corps into using alternative programs such as the Health Professions Scholarship Program (HPSP) and the Financial Assistance Program (FAP). The programs above cost the Navy 10 million dollars a year, but necessary in order to try and attract dentists into the Navy. However, the contract alternative that is proposed in this thesis should be considered as another source for acquiring already trained dentists.

The scope of this thesis included, but was not be limited to: (1) a review of the current structure of pay for active duty Endodontists by referencing Additional Special Pay (ASP), Variable Special Pay (VSP), Dental Officer Multiyear Retention Bonus (DOMRB) and the Board Certification Pay (BCP) that dentists receive while serving on active duty (2) and a summary of private sector pay and incentives for dentists in private practice. The thesis also analyzed the differences between the two with a Cost-Benefit Analysis (CBA) model.

The completed research found a $223,143 savings in cost for contracting a licensed Endodontist in place of recruiting a general dentist and training them to become an Endodontist over the 10 year period as composed in the analysis. Furthermore, to mitigate shortages, this research proposes to concentrate resources on military essential competencies and contracting workload for non-military essential functions, such as Endodontists. Endodontists were chosen because they are one of the larger non-essential specialties with billet inventories above the Operational Support Algorithm (OSA).

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I. INTRODUCTION

A. BACKGROUND

Today, the United States Navy Dental Corps is having difficulty retaining junior and mid-grade Dental Corps Officers. These are the same officers the Navy needs to fill seats for the In-Service and Out-Service residency programs used to train general dentists as specialists for the Navy's future. Many Dental Officers are not remaining on active duty beyond their initial obligation due to both economic and Navy-specific reasons. Additionally, the Navy has failed to meet recruitment goals and needs to use alternative methods in order to continue and attract uniformed dentists into the Navy. The alternative methods usually involve monetary incentives.

Past research has identified key influences on the retention of junior Navy Dental Officers beyond their initial obligation. Results indicated that accession source, dental specialty (other than general dentistry) and the number of operational tours as a percentage of total tours an officer completes during his or her initial obligation period are significant factors for retention.[1]

At the close of FY2003, the Navy Dental Corps was manned at 91 percent. Despite aggressive efforts to improve Dental Corps recruitment and retention, the annual loss rate between FY2003 and FY2005 increased from 8.3 percent to 12.9 percent[2]. In addition, declining junior officer retention rates has negatively impacted applications for residency training programs, which have dropped 18 percent over the last five years. The civilian-military pay gap and the high debt load of our junior officers are the primary reasons given by Dental Corps officers leaving the Navy.[3]

The results indicated above have forced the Dental Corps into using alternative programs such as the Health Professions Scholarship Program (HPSP) and the Financial

[1] Alan B. Christian, (2004). *MBA Professional Report: Influences on the Retention of Residency-Trained and Non-Residency Trained Navy Dental Corps Officers.* Retrieved 13 October 2005 from Naval Postgraduate School Library Web site: http://library.nps.navy.mil/uhtbin/cgisirsi/6RX0aVYDrY/SIRSI/275890064/123

[2] LCDR Kurt Houser, Medical Service Corps, United States Navy, Dental Corps Officer Community Manager, Navy Personnel Command (NAVPERSCOM). Information given via email in January 2006.

[3] Former Surgeon General of the Navy, "Defense Subcommittee Hearing on Medical Programs Testimony," 2004, http://appropriations.senate.gov/hearmarkups/record.cfm?id=220818/ [28 April 2004].

Assistance Program (FAP). The programs above cost the Navy 10 million dollars a year[4], but necessary in order to attract dentists into the Navy. However, the contract alternative should be considered as a possible source for acquiring already trained and specialized dentists as well.

B. PURPOSE

The purpose of this thesis is to study outsourcing shore-based billets for dental specialty needs that are not considered military essential. The primary research question is the following: Should Navy Medicine continue to fund the Base Case (maintaining non-essential active duty billets) or use those funds toward an alternative of outsourcing non-essential dental specialties using the factors mentioned in this proposal and any others derived from my research?

C. METHODOLOGY AND SCOPE OF THE STUDY

This study analyzed whether the Dental Corps should continue to recruit general dentists for the purpose of retaining them beyond their initial obligation in order to train them in various specialties. This analysis also evaluated the differences of costs and benefits between the Base Case and the alternative proposal. The alternative is to hire civilian contract workers that are already trained, licensed and presently practicing within a given specialty. This research involved a step-by-step process for the Dental Corps to do a Business Case Analysis (BCA) of their specialties. The analysis used this process specifically with Endodontists, a non-essential specialty with billet inventories above the Operational Support Algorithm (OSA), thus making them an obvious target for potential outsourcing right now. I also researched current costs involved with recruiting and training a uniformed general dentist to become a practicing and licensed Endodontist and compare that to the cost of contracting out for a practicing and licensed civilian Endodontist over a period of time. This project will be both a quantitative and qualitative analysis based upon current data to assess the most effective and efficient way for the Navy Dental Corps to obtain endodontic services.

[4] LT Rodney Wilson, Dental Programs Coordinator, Naval Education and Training Command (NMETC).

D. BENEFITS OF THE STUDY

The results of this study can provide Navy Medicine with a useful framework for understanding the benefits of outsourcing non-essential shore billets for the Dental Corps. Currently, uniformed Endodontists are needed to treat existing dental needs of our Sailors and Marines, and to fulfill existing readiness policies. This was compared to contracting an already trained and licensed civilian Endodontist and weighing the benefits of the two. The goal was to evaluate the existing system using analyses to determine the feasibility of continuing to train active duty general dentists as Endodontists.

E. ORGANIZATION OF THE THESIS

The following chapters study the potential benefit of outsourcing Endodontists specifically, but could be used for other dental specialists in non-essential shore billets as well. Chapter II highlights relevant information of the Navy Dental Corps. The intent is to provide the reader with a working knowledge of their history, accession sources, pay structure and life cycle costs. Chapter III enlightens the reader with a policy perspective and history on outsourcing. Chapter IV reveals an extensive literature review focusing on outsourcing tools and the theoretical foundations that they are founded upon. Chapter V presents the foundation of the Business Case Analysis (BCA) model and methodology that was used to conclude with the results of the findings. Chapter VI discusses the conclusions of the study, recommendations, and potential areas for further research.

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II. DENTAL CORPS

A. OVERVIEW

Although one of the youngest of the Navy Medicine Corps, the United States Dental Corps can trace its roots back to 1873.[5] Prior to establishing the Dental Corps, dental services were performed by civilian dentists ashore (making them our earliest form of outsourcing) while Corpsman or Medical Officers performed those duties at sea. In 1912, Congress officially authorized establishing the modern Dental Corps. Within one year, the Navy Surgeon General was able to report to the Secretary of the Navy that recruitment was directly improved due to the establishment of the Dental Corps. Navy dentists were able to treat conditions that only a year prior would have rendered a recruit unfit for active duty.[6]

Today, the Dental Corps continues this tradition by ensuring military readiness of today's Sailors and Marines by proudly serving on Naval Ships and with Marine Expeditionary Units. These officers now perform many critical support functions for the medical community, serving as Triage Officers and Surgical Support Officers on medical platforms.[7]

The United States Navy Dental Corps is one of five Corps within the Bureau of Medicine and Surgery. The Chief of the Dental Corps serves as the Assistant Chief for Dentistry for the Bureau of Medicine and Surgery (M09B DC) and reports to the Deputy Chief, Bureau of Medicine and Surgery.[8] As a Rear Admiral, she is responsible for dental readiness of the fleet and Marine Corps, planning and operations, material and facilities and healthcare analysis.[9] The Dental Corps headquarters is located in Washington, DC at the Bureau of Medicine and Surgery.

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5 "90 Years Marching Forward." Lkd. Dental Corps History at "Naval Medicine Online Homepage." http://navalmedicine.med.navy.mil/default.cfm?seltab=about&selmod=7AF79F11-2A5E-780B-45D6C0D83FF101C8&docid=10307&parentid=942CA57C-802E-D019-A46C463C916A02D3& [11 May 2004].

6 Ibid.

7 Ibid.

8 Navy Department, Manual of the Medical Department, NAVMED P-117 (Washington, DC: 1996), Chapter 6, 5.

9 Ibid, 3-6.

B. OFFICER ACCESSION PROGRAMS

The Dental Corps faces increasing competition from the civilian sector. Stable civilian market conditions combined with the promise of higher civilian salaries without the commitment of active duty service lure potential candidates away from commissioning programs or cause them to resign their commission upon completion of their initial service obligation. Many future dentists can participate in numerous commissioning programs to obtain their Navy education. These programs are specified by the Office of the Chief of Naval Operations (N132). The definitions of these programs are taken directly from the OPNAV Instruction (OPNAVINST 1110.1) and are listed below:[10]

- Direct Commission: Recruiting a Dentist directly from a civilian environment.
- Recall to Active Duty: The voluntary return of a Commissioned Officer from reserve status to active duty.
- Inter-Service Transfer: The transfer of a Commissioned Officer serving on active duty, between uniformed services, or the transfer of Commissioned Officers not on active duty, between reserve components of the uniformed services.
- Health Service Collegiate Program (HSCP): Two-year scholarship program in designated health professions to complete degree/certification requirements and obtain Reserve officer commission in the active duty component of the Dental Corps upon graduation.
- Armed Forces Health Professions Scholarship Program (AFHPSP): Scholarship program for attendance at the Uniformed Service University of the Health Science (USUHS). This program requires a minimum two-year payback and six months of service for each additional six months of education.

[10] Navy Department, Administration of Health Professional Accession Programs (HPAP), OPNAVINST 1110.1 (Washington DC: 2001), 2-3.

- Health Professions Scholarship Program (HPSP): An Inactive Ready Reserve Program for students accepted to, or enrolled in an accredited training program leading to a health profession degree. This program also allows HPSP graduates to obtain graduate professional education at accredited civilian institutions.

- Financial Assistance Program (FAP): An Inactive Ready Reserve (IRR) Program for Dentists currently accepted to, or enrolled in an accredited residency or fellowship program progressing toward a specialty, which has been designated as critical to the Department of Defense (DoD).

- Health Professions Loan Repayment Program (HPLRP): An active duty and Reserve program used to recruit qualified health professional in specific specialties. Under the HPLRP, the Navy repays all or a portion of the participants' incurred educational loan obligations.

Individuals who participate in a Navy sponsored dental scholarship program, (including AFHPSP, HPSP, HSCP and FAP), are commissioned as Ensigns in the Reserves while enrolled in a civilian dental school. These individuals retain this rank and salary corresponding to their pay grade while functioning as a "prospective Dental Corps Officer."[11] While in dental school under a Health Profession Scholarship Program, these individuals receive monthly stipends, full tuition and reimbursement for books and associated expenses. The total service obligation is three years for individuals accepting any of the above accession programs in which the U.S. Navy funds or provides a "program of professional study in dentistry leading to a Doctor of Dental Surgery (DDS) or Doctor of Dental Medicine (DMD)."[12]

C. PAY STRUCTURE

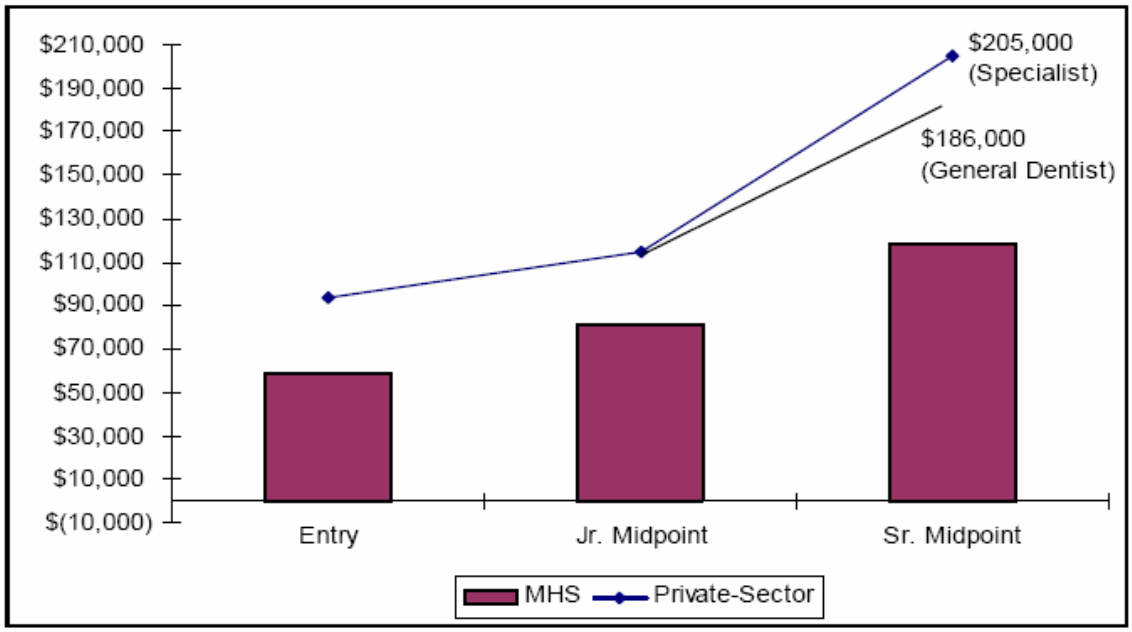
Although not directly addressed in this study, Dental Corps Officers' compensation has long been suggested as a significant contributor to poor retention for

[11] Navy Department, Appointment of Regular and Reserve Officers in the Dental Corps of the U.S. Navy, SECNAVINST 1120.13A, Enclosure 1 (Washington, DC:1988) 1.

[12] Ibid.

junior and mid-grade Officers.[13] Numerous studies have investigated differences in the compensation of military healthcare professionals and their civilian counterparts. Findings reveal that for both military Physicians and Dentists, there are pay gaps between military providers and their civilian counterparts throughout their careers (Figure 1).[14] These pay gaps are considered a leading contributor to poor officer retention and analyses showed that the uniformed-civilian pay gap existed at every career juncture and that this pay gap was greater for Specialists than for General Dentists.[15]

Figure 1. Comparison of Navy Dental Officers Compensation v. Private-Sector Dentists in 2000



To alleviate this pay gap and associated perceptions, numerous pay incentive programs have been instituted to decrease that pay gap. Dentists in today's Navy receive multiple incentives with varying levels of compensation based on years of service, specialty and contractual commitment to the Navy. The specialty pays and bonuses

[13] Shayne Brannman, et al., Center for Naval Analyses, Life-Cycle Costs of Uniform Health Professions; Phase II: The Impact of Constraints and Policies on the Optimal-Mix-of Accession Model, CRM D0007887.A2/Final, (Alexandria, Virginia: 2003), 132, 133.

[14] Shayne Brannman, et al., Center for Naval Analyses, Health Professions' Retention-Accession Incentives Study Reported to Congress, CRM D0003360.A1, (Alexandria, Virginia: 2001), 35, 73.

[15] Ibid.

include Variable Special Pay (VSP), Additional Special Pay (ASP), Board Certification Pay (BCP), Dental Officer Multiyear Retention Bonus (DOMRB) and a one time Critical Skills Retention Bonus (CSRB) all in addition to their base pay. Furthermore, new accessions who agree to serve on active duty and did not receive DoD financial aid, or were not participants in the Armed Forces Health Profession Scholarship Program (AFHPSP) and Financial Assistance Program (FAP) to pay for dental school, are eligible for an accession bonus for joining the Navy.[16] The currently approved categories of special pay and their explanations are:

1. Variable Special Pay (VSP): VSP is an annual entitlement for DC Officers on active duty who will serve for at least one year (unless otherwise qualifying under specific provisions outlined in the Chapter Six of the DoD Financial Management Regulations). VSP is disbursed monthly, with the amount based on years of service and completion of an initial residency program (Table 1).[17] This entitlement does not have a contractual obligation beyond the eligibility requirement of one year.[18]

[16] Department of Defense, Financial Management Regulation Military Pay Policy and Procedures-Active Duty and Reserve Pay, DoDFMR 7000-14R, Volume 7A, Chapter 6 (Washington DC: 2002), 3.

[17] Department of Defense, Financial Management Regulation Military Pay Policy and Procedures-Active Duty and Reserve Pay, DoDFMR 7000-14R, Volume 7A, Chapter 6 (Washington DC: 2002), 7-8.

[18] David Taylor, Center for Naval Analyses, Comparison of Civilian and Navy Pay for Dentists, CRM 91-20, (Alexandria, Virginia: 1991), 4.

Table 1. Dental Corps Variable Special Pay

Variable Special Pay (VSP)	
Years Service	**Special Pay Amount (Dollars)**
< 3*	3,000
3 to < 6**	7,000
6 to < 8	7,000
8 to < 12	12,000
12 to < 14	10,000
14 to < 18	9,000
18 & Greater	8,000
O-6 & Above	7,000

*** If undergoing Internship Training**

**** Not undergoing Internship Training**

After Ref: BUMED FY04 Dental Officer Special Pay Plan

2. Additional Special Pay (ASP): ASP is an annual disbursed entitlement. DC Officers who are entitled for VSP are eligible for ASP as well as long as they are "not undergoing dental internship, fellowship or initial dental residency training, and possess a current, valid unrestricted license or approved waiver."[19] Additionally, a written agreement to remain on active duty for no less than one year is required.[20] ASP will only be disbursed once the agreement is completed and will begin on the contract's execution date.[21] ASP payments are also based on years of service (Table 2).

[19] Navy Department, "FY04 Dental Officer Special Pay Plan," Bureau of Medicine and Surgery Special Pay Page, 2003, https://bumed.med.navy.mil/M1/SpecialPay.html/ [25 October 2005], 1-2.

[20] Ibid, 1-2.

[21] Department of Defense, Financial Management Regulation Military Pay Policy and Procedures-Active Duty and Reserve Pay, DoDFMR 7000-14R, Volume 7A, Chapter 6 (Washington DC: 2002), 7-8.

Table 2. Dental Corps Additional Special Pay

Additional Special Pay (ASP)	
Years Service	**Special Pay Amount (Dollars)**
< 3	4,000
3 to < 10	6,000
10 & Greater	15,000

After Ref: BUMED FY04 Dental Officer Special Pay Plan

3. Board Certification Pay (BCP): BCP is also an annual entitlement disbursed monthly to eligible active duty Dental Officers. Dental Officers are eligible for BCP if they are entitled to VSP and are board certified.[22] Board certification consists of being "certified by an American Dental Specialty Examining Board recognized by the American Dental Association (ADA) or [being] awarded a Board Certification Equivalency Certificate by the Department of Defense (DoD)."[23] As with other special pays, BCP is based on years of creditable service (Table 3).

Table 3. Dental Corps Board Certification Pay

Board Certification Pay (BCP)	
Years Service	**Special Pay Amount (Dollars)**
< 10	2,500
10 to < 12	3,500
12 to < 14	4,000
14 to < 18	5,000
18 & Greater	6,000

After Ref: BUMED FY04 Dental Officer Special Pay Plan

4. Dental Officer Multiyear Retention Bonus (DOMRB): DOMRB is an annual special pay based on an Officer's clinical specialty area and agreement to extend his or her active duty obligated service commitment in the Navy (Table 4).

[22] Department of Defense, Financial Management Regulation Military Pay Policy and Procedures-Active Duty and Reserve Pay, DoDFMR 7000-14R, Volume 7A, Chapter 6 (Washington DC: 2002), 7-8.

[23] Ibid, 6.

Table 4. Dental Corps Dental Officers Multiyear Retention Bonus

Dental Officer Multiyear Retention Bonus (DOMRB) Rates			
Length of Agreement by Specialty	**4-Year Agreement (Dollars)**	**3-Year Agreement (Dollars)**	**2-Year Agreement (Dollars)**
Oral-Maxillofacial Surgeons	20,000	10,000	8,000
Comprehensive/Operative	14,000	10,000	8,000
Dentistry	14,000	10,000	8,000
Endodontics	14,000	10,000	8,000
Orthodontics	14,000	10,000	8,000
Oral Pathology/Oral Diagnosis/	14,000	10,000	8,000
Oral Medicine	14,000	10,000	8,000
Pediatric Dentistry	14,000	10,000	8,000
Periodontics	14,000	10,000	8,000
Prosthodontics	14,000	10,000	8,000
Public Health Dentistry	14,000	10,000	8,000
Temporomandibular Dysfunction	14,000	10,000	8,000
(TMD)	14,000	10,000	8,000
Dental Research	12,000	8,000	6,000
Exodontia (Advanced Clinical	12,000	8,000	6,000
Practice – ACP)	12,000	8,000	6,000
Endodontics (ACP)	12,000	8,000	6,000
General Dentistry (ACP)	12,000	8,000	6,000
Periodontics (ACP)	12,000	8,000	6,000
Prosthodontics (ACP)	12,000	8,000	6,000

After Ref: BUMED FY04 Dental Officer Special Pay Plan

To be eligible for DOMRB, Dental Officers with a current license with no restriction (unless practicing with a waiver) and below the rank of Rear Admiral (O-7) must "execute a written agreement to remain on active duty"[24] for a period no less than two years to a maximum of four years. Additionally, Dental Officers must have "completed [their] initial residency training"[25] program or have "at least eight years of creditable service or have completed their active duty obligated service commitment as part of their payback for Navy or DoD-funded education and training.

[24] Navy Department, "FY04 Dental Officer Special Pay Plan," Bureau of Medicine and Surgery Special Pay Page, 2003, https://bumed.med.navy.mil/M1/SpecialPay.html/ [25 October 2005], 2-4.

[25] Ibid, 2-4.

5. Critical Skills Retention Bonus (CSRB): In Fiscal Year 2002, the DoD initiated the CSRB as an incentive to retain military healthcare officers possessing certain identified critical skills undermanned or essential to meeting the Navy's medical mission. Unfortunately, due to funding issues, this initiative was not implemented in FY02.[26] However, Dental Officers who elected to participate in the CSRB in FY03 and executed agreements did receive the one-time bonus of $10,000.00.[27]

Although Navy Dentists have numerous special pay incentives, the pay gap between military Dentists and private-sector Dentists continues to increase.[28] Furthermore, with new graduates and new Dental Officers facing larger dental school education debt, these potential career officers "are choosing to work in private practice."[29] Finally, "the December 2000 Journal of the American Dental Association report[ed], that the number of Dentists retiring will grow faster than the number of dental school graduates."[30] This trend is expected to continue over the next 20 years. Thus, predicting to lower the future price of dental practices being sold and making private practice more affordable and attractive to both current and potential future Navy Dental Officers.[31]

D. PAY GAPS

A pay gap is defined as the percentage difference in military versus civilian pay growth as measured from a given starting point. The index used to measure civilian pay growth is the Employment Cost Index (ECI), which reflects pay growth in the civilian

[26] Assistant Secretary of Defense, Health Affairs, "Fiscal Year 2003Dental Officer Special Pay Plan," BUMED Special Pay Page, 2002, https://bumed.med.navy.mil/bonus/Eligible%20Recipients%of%20CSRB%20Plan1.pdf./[15 October 2005].

[27] Navy Department, FY-03 Professions Critical Skills Retention Bonus (CSRB), NAVADMIN 010/03 (Washington DC: 2003) <https://www.buper.navy.mil/navadmin/nav03/nav03010.txt/> [15 October 2005].

[28] M. Almendarez, et al. (2001). Health Professions' Retention-Accession Incentives Study Reported to Congress (CRM D0003360.A1). Alexandria, Virginia: Center for Naval Analyses, 34-35.

[29] Ibid, 34-35.

[30] Ibid, 35.

[31] Ibid, 35.

force at large.[32] In 1992, the RAND Corporation developed the Defense Employment Cost Index (DECI), which attempts to measure civilian pay growth for the subset of civilian workers whose composition by age, education, occupation, gender, and race/ethnicity represents that of active duty military personnel. Since that time, pay gaps have been based on the ECI versus the DECI by policymakers for officer and enlisted personnel by gender and seniority and for occupational and age categories. The formula above is what policymakers use to try and close the discovered pay gaps and to also determine the military pay cap.

According to widely published reports since 1992, a gap of more than an average of 13 percent now separates the pay of military personnel from that of their civilian counterparts. Although the reports are not always clear about what they mean by "pay gap," the Dental Corps has found that many potential Dentists considering the Navy apparently accept the term at face value as an indication that Navy Dentists earn less than they can earn as civilians. In most studies that have been conducted overall on this concern, they would be correct with their assumption. For example, a recent study states "our analysis showed that the uniformed-civilian pay gap existed at every career juncture and that this pay gap was greater for Specialists than for General Dentists."[33] More specifically, pay gaps of approximately $35,000, $34,000, and $48,000 exist for General Dentists with 1-5, 6-10, and 11-15 years of practice, respectively. For Dental Specialists with 11-15 years of practice, the pay gap can be as high as $87,000.[34]

In addition, the CNA study mentioned above also recommends increasing ASP by 20%, ISP by 25% and the Multi-Year Retention Bonus by 43% for all uniformed Dentists. However, they also recommend the following:

- More AFHPSP Accessions: To provide the services with reliable and consistent accessions, the services should plan to meet the majority of their total dental

[32] J. Hosek, et al. (1994). Military Pay Gaps. (MDA903-90-C-0004). Santa Monica, California: The RAND Corporation, ix.

[33] M. Almendarez, et al. (2001). Health Professions' Retention-Accession Incentives Study Reported to Congress (CRM D0003360.A1). Alexandria, Virginia: Center for Naval Analyses, 113.

[34] Ibid, 113.

accessions through the AFHPSP because it has become increasingly difficult to acquire Dentists through the direct accession pipeline.[35]

- Target Experienced Dentists: Our proposed changes to ASP are designed as a long-term solution to the current problem of a "hole" in the profile of Dentists that exists for mid-career Dentists. Note that our ASP proposal won't immediately remedy the hole, but it will reduce its occurrence in the future. In addition, this hole cannot be filled with new accessions or by improving retention of senior Dentists (O-5s and O-6s). As a short-term way to help fill in the hole, we recommend that the services use the $30,000 accession bonus to target experienced Dentists who could access as O-4s. We recognize that this will be difficult given the current uniformed-civilian pay gap, but any Dentists who can be assessed as O-4s will help alleviate the current problem. We also recommend that the MHS explore expanding the Health Professions Loan Repayment Program (HPLRP) as a retention tool by offering to pay the student debt for eligible uniformed Dentists facing their first stay-leave military decision.[36]
- Inflationary Adjustments: Statutory and discretionary pays should be reviewed every three years to consider adjustments in special pays for inflationary changes. Failure to make any adjustments in these pays for inflation will result in reduced pay parity and widening pay gaps even if civilian compensation does not increase in real terms. We recommend a review for inflation every three years rather than annual adjustment due to the difficulty such a binding constraint would place on the services.[37]

All of the following recommendations above are outstanding suggestions and some have already been implemented or are currently in the process of. However, the study failed to mention a very important recommendation, outsourcing the non-essential Specialists for shore based billets. This option is a viable and affordable one and it will be discussed in the upcoming chapters ahead.

[35] M. Almendarez, et al. (2001). Health Professions' Retention-Accession Incentives Study Reported to Congress (CRM D0003360.A1). Alexandria, Virginia: Center for Naval Analyses, 151.

[36] Ibid, 156.

[37] Ibid, 156.

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III. A POLICY PERSPECTIVE ON OUTSOURCING

A. OVERVIEW

Currently, contractors are performing jobs in "harm's way" and in a number of other areas in all services throughout the world. This research only proposes that dental specialists be hired for shore based non-essential billets. However, this chapter provides an historical perspective on outsourcing and shows the flexibility and usefulness of contractors in today's military.

The use of contractors serving with the military ranks is not a new concept. From the American Revolution to present day Iraq, contractors have been integral to the support of the United States Military during peace and war. Traditionally, contractors have supported logistics and maintenance as well as provided technical assistance. "Contractor support is integral to the Navy's history. Contractors also provided logistical support to the fledgling Army during the Revolutionary War, and according to General George Washington, the Army's supply improved with the advent of Contractor support."[38]

One of the earliest and prevalent uses of contractors on the battlefield came in the form of the United States Merchant Marine. The American Merchant Marine was the organization that the Continental Congress' Maritime Committee drew its first combat ships and crews from in the form of Privateers. These privately owned and armed ships were authorized, via letters of marquee, to harass and capture enemy ships, disrupting logistics, trade and communications in exchange for a share of captured property. "The largest numbers of Privateers were those that received authorization from the Continental Congress. Altogether, there were not less than 2000 privately armed vessels playing their part in the (Revolutionary) war… operated by 70,000 men."[39]

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[38] Michael R. Rampy, "Paradox or Paradigm? Operational Contractor Support," *Military Review*, http://www.army.mil/professionalwriting/volumes/volume3/september_2005/9_05_1.htm (accessed September 14, 2005)

[39] Carroll Storrs Alden and Allan Westcott, *The United States Navy: A History*, (Chicago, Ill: J. B. Lippincott Company, 1943), 12.

Privateers were not the only combat ships the colonies had. A "regular" Navy was created also using Sailors and ships contracted from the American Merchant Marine, "two-thirds of its ships being made-over Merchantmen and the crews being drawn from merchant vessels."[40]

The Army was not afraid of using contractors on the battlefield. For the Army, the line between contractor and mercenary was relatively defined, especially before the asymmetric warfare we see in Iraq today. During the Revolutionary War, the Army used contractors primarily for non-combat logistical and medical support. Until the Civil War, jobs such as chaplains, teamsters and blacksmiths were contracted civilians hired to follow the Army in most cases. The Navy contracted with civilians to serve aboard combatant ships as doctors and chaplains and these personnel were considered non-combatants.

Other services provided were from traveling merchants called Suttlers. The Suttlers were authorized to sell personal goods to soldiers on post or on campaign. They were known as the "traveling merchants" and became an integral part of the military system to the point that the Army regulation authorized them to sell to soldiers via a strictly regulated credit system in conjunction with the Paymasters of regiments.[41] During peace time, the Suttlers were authorized by the War Department to occupy buildings on Army property under the understanding that they would also provide certain recreational services and goods to the common soldier. No government funding was given to them and in fact they were solely supported by the common soldier's patronage.[42] The practice of Suttlers was used up until the time of the Spanish American War, when "The War Department (now Department of the Army) issued General Order Number 46 directing Post Commanders to establish an exchange at every post, where

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[40] Alden and Westcott, 16.

41 Revised United States Army Regulations of 1861 (Washington D.C.: Government Printing Office, 1863), Article XXV.

42 George G. Garrett, "The Evolution of and Ever Evolving Army Sports Program," Army Moral and Welfare, http://www.armymwr.com/portal/recreation/sportsandfitness/history/history.asp (accessed September 12, 2005)

practicable."[43] This was the establishment of the modern Post Exchange (PX) system that is still operated for the military by contracted civilians, even in hostile areas such as Iraq and Korea.

Use of Contractors in the Military in the Twentieth Century and Beyond:

At the start of the twentieth century, the United States Merchant Marine again played a vital role as military contractors. Major General Clarence Lang pointed out "without the Merchant Marine, the Army cannot go to war."[44] Disrupting enemy supply lines has always been a military objective and this was never more prevalent than in the World Wars. In order to prevent a build up of forces in Europe, the German Navy directly targeted merchantmen and others as well transiting the Atlantic Ocean. Merchant Ships of warring nations have usually been armed, but it was not until World War II that American military detachments were assigned to the ships to protect them.

The American Merchant Marine was also present in numerous military operations during World War II. For example, "about 2,700 Merchant Ships were involved in the first wave of the invasion on D-Day, by landing troops and munitions under enemy fire."[45] It should be noted that this is the first time that U.S. non-combatant contractors were combat casualties. Arguably, but not unanimously, the Battle of ships in the Atlantic during World War II, was the first modern asymmetric battlefield. Although numbers vary among sources, of the "225,000 Seamen and Officers manning the American Merchant Marine, almost 6,000 died in action at sea. Only the Marine Corps suffered proportionally higher casualties during the war."[46]

One of the more recent uses of contractors on the battlefield is for the Navy's Construction Battalions. They originally built bases in outlying and forward areas; because they were considered non-combatants it was difficult to employ them in hostile

43 AAFES, "Our History: Highlights," Army and Air Forces Exchange Services Web Page, http://www.aafes.com/pa/history_page.htm (accessed September 12, 2005)

44 Irwin M. Heine, *The United States Merchant Marine: A National Asset* (Washington D.C.: National Maritime Council ,1976) 37.

45 United States Maritime Service Veterans, "U.S. Merchant Marine in World War II," US Maritime Service Veterans Web Page, http://www.usmm.org/ww2.html, (accessed September 14, 2005)

46 Benjamin W. Labaree... [et al.], *America and the Sea: A Maritime History* (Mystic, Conn: Mystic Seaport, 1998), 581-2.

areas where airfields and port facilities needed to be built and repaired. During early World War II, the Seabees, as they are nicknamed, were recruited into military service directly from their contracted civilian companies. In some cases, the entire civilian firm was organized into a military unit. "The earliest Seabees were recruited from the civilian construction trades and were placed under the leadership of the Navy's Civil Engineer Corps. Because of the emphasis on experience and skill rather than on physical standards, the average age of Seabees during the early days of the war was 37."[47]

B. STAKEHOLDERS

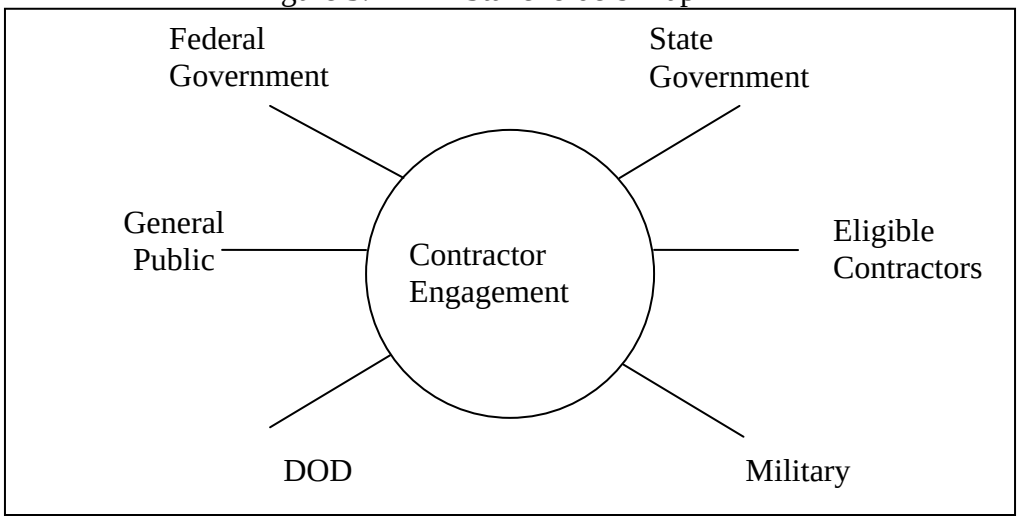
Before the identification and discussion of the stakeholders involved in the issue of contractor engagement in the military, there is a need to map out the secondary and tertiary issues and construct an issue set so that all the relationships and 'stakes' can be clearly reflected. Figure 2 below shows the issue set and this is followed by the stakeholders' map in Figure 3 below:

Figure 2. Stakeholders Issue Set

Primary Issue	Secondary Issue	Tertiary Issue
Contractor Engagement	Control and Accountability	Crimes committed by Contractors
		Ability to suspend or abandon operations
		Financial abuse
	Macroeconomics	Job creations in civilian sector
		Government expenditure
	Cost	Efficiency
		Cost effectiveness
	Foreign Policy	Political price of deploying military forces overseas
		Congressional restrictions on foreign policies
	Manpower	Numbers to meet requirements
		Training
		Professional identity and culture

[47] Chief of Naval Information, "Seabee's," Office of the Chief of Naval Information, http://www.chinfo.navy.mil/navpalib/factfile/personnel/seabees/seabee1.html (accessed August 29, 2005)

Figure 3. Stakeholders Map



The federal government is used loosely here to mean the national political leadership. Federal government concerns are mainly in macroeconomics, cost and foreign policy. The use of civilian contractors increases government expenditure and boosts the economy as a whole. The most often cited 'official' reason for the federal government is the belief that outsourcing military functions will generate efficiency and cost savings, and therefore is a more cost effective solution than maintaining a large active force. Outsourcing can achieve maximum benefits only when there is competition, but the market for big military contracts is dominated by a few players. Security and size considerations impose further constraints on competition, frequently resulting in contracts being given on a no-bid basis. Unofficially, the use of contractors allows the federal government to carry out foreign operations which may not gain legislative or public approval. For example, it allowed the Bush Administration to circumvent congressional limits on the size and scope of the U.S. military's involvement in Columbia's civil war. It also reduces the political price by enabling the federal government to avoid unappealing alternatives such as increasing deployment of its own troops or persuading other countries to increase their level of involvement.[48]

[48] Peter W. Singer, (2005) *Outsourcing War*.

In comparison, the stakes for state governments are more direct. The state governments will support the initiative to the extent that the replacement of military functions by Contractors is able to create jobs for their states.

The general public on the other hand, is concerned by reports of overcharging and profiteering by the contractors. They are apprehensive that the use of contractors has reduced the federal government's accountability and opened up avenues for financial abuse. Civilians are enticed by the job opportunities and high pay offered by contractors working for the military. These jobs present opportunities to 'make a quick buck' for those willing to take higher risks on the battlefield.

For eligible contractors, the issue centers on the bottom line and potential profits. They will therefore abandon or suspend operations when the risk becomes unpalatable, or conditions become unprofitable. In the era of the All Volunteer Force (AVF), contractors contend that they are in the best position to provide services which the military find too costly to develop and maintain in-house because of their ability to achieve economies of scale, and recruit expertise at lower costs. They argue that the military should focus on their core competencies in military operations and leave the non-core ones to them. This position enables them to move in on areas traditionally undertaken by uniformed military personnel. Contractors typically rely on their political connections to enter into the military contracting market and obtain attractive 'cost plus' contracts.

The most important reason for DoD to engage contractors is cost. DoD believes that cost savings are possible because contractors enable them to avoid costs associated with recruiting, training and providing compensatory benefits in the form of a robust health care program, retirement and other factors that contribute to the composite pay of a member. Another advantage for DoD is flexibility. With contractors, DoD is able to enhance its ability to meet surge requirements without maintaining a large force.

Manpower concerns are obviously the main reason the Dental Corps would want to engage contractors. With the advent of the AVF, the military has competed in the labor markets for skilled specialists. The Dental Corps faces especially significant challenges in recruiting high quality Dentists and retaining their services. By engaging contractors, the Navy could focus on core competencies resulting in a strengthened

ability to present a more professional and attractive image. The post-Cold War drawdown has reduced the size of the active military significantly. By using contractors, the military aims to minimize impact on mission capabilities. Likewise, contractors can provide the Dental Corps an easily accessible source of expertise, and reduce the Navy's training requirement when deploying advanced technology. The ability to meet surge requirements without long term effects on the manpower structure is another important consideration for the Navy.

While the military acknowledges the advantages of contractor engagement, the loss of control is perhaps a matter of concern; which introduces undesirable uncertainty into military operations. With increasing use of contractors, the military is also concerned with contractors recruiting high skilled military members by offering higher pay. This would especially be significant for the specialists needed in the Dental Corps. Recruiting contractors also challenges the military's unique culture and professional identity.[49]

C. DISINTERESTED PARTY ANALYSIS

In the previous sections, we saw concerns of the various stakeholders of the outsourcing process. They center on three central issues: *Availability of Manpower, Cost, Control and Accountability*. Although the stakeholders have vigorously advocated their positions, the reality is that the data remains fairly ambiguous. In the end, whether or not to outsource is a subjective decision and that answer can be found within the affected community (ies).

Availability of Manpower:

Outsourcing has been regarded as a more efficient and effective way for performing non-essential military activities. However, cost-effectiveness may not always be the primary motivation. Other reasons cited, ". . . to gain specialized technical skills,

[49] Peter W. Singer, (2005) *Outsourcing War*.

bypass limits on military personnel that can be deployed to certain regions, and ensure that scarce resources are available for other assignments such as medical and dental specialists".[50]

Through outsourcing, the military gains some flexibility and does not have a large force sitting around the world waiting for a war to break out. "…if we decide to invade a country, we can go out and hire contractors very, very quickly at a rate we would never be able to recruit otherwise." After the war or when we no longer need the capacity, we send them home.[51] Also, they can fill the role at shore commands where a need for specialists is needed. For example, in Operation Iraqi Freedom, the Army has determined that some of their combat support jobs are not 'inherently' military and contracted them out to companies. Contracting roles usually involve logistics, transportation, supply, food service, medical and some security.

Cost:

One of the arguments presented for using contractors is that it saves taxpayer's money. The salary paid to a soldier on active duty for example, can be about $35,000 a year, which does not include the costs of recruiting, training, pay, benefits and retirement. "News reports on the war in Iraq have noted the relatively high salaries of contractors, $20,000 per month, triple or more what active-duty soldiers earn. . . ".[52]

According to Peter Singer, author of Private Warriors, there has been no proven cost savings. He feels that the savings associated with Contractors are political. "A military manpower expansion, the number of Reserves and National Guard activated or needing our Allies for support."[53] A report from GAO, July 2005, stated that Department of Defense, Department of State and the U.S. Agency for International Development have complete data on the costs of using private security Contractors.

50Foreign Policy, "Think Again: Mercenaries" by Deborah Avant, http://www.foreignpolicy.com/story/cms.php?story (accessed September 15, 2005).

51 PBS, Frontline: "Private Warriors: Contractors: Outsourcing the Mission", by Steven Schooner, http://www.pbs.org/wgbh/pages/frontline/shows/warriors/contractors/out.html (accessed September 15, 2005).

52 Foreign Policy, "Think Again: Mercenaries" by Deborah Avant.

53 PBS, Frontline: "Private Warriors: Contractors: Does Privatization Save Money", Peter Singer, http://www.pbs.org/wgbh/pages/frontline/shows/warriors/contractors/out.html (accessed September 15, 2005).

Control and Accountability:

One of the major concerns is that Contractors are accountable to no one and that they increase the military's workload. Peter Singer discusses loss of control with Contractors. Contractors are hired by private businesses to perform military functions that are not under control of the Combatant Commander. At anytime, they can abandon their operations for any reason (unprofitable, unsafe) which then leaves the military undermanned and in a dangerous position.[54]

Public Law 108-375, Section 1206 Report:

Another point of view is that Contractors are controlled through legislation, like Public Law 108-375. This law describes two types of Contractors that support deployed military forces and reconstruction efforts in Iraq. Contractors supporting the deployed forces provide services to Combat Commanders that usually involve transportation, laundry, billeting and food services. Contractors that do not support deployed forces are performing reconstruction duties and private security. Site security involves site surveys, coordination of logistics and to assess structures and facilities. Both of these categories of Contractors rely heavily on coordination with each other.[55]

Contractors in Iraq are governed by laws, regulations and guidelines described in these laws as in the following:

Internal:

The Federal Acquisition Regulations (FAR) System

Heads of Federal Agencies

Head of Contracting Activity (HCA)

Contracting Officer

Contracting Officer's Representatives (COR)

[54] Brookings Institute: "Outsourcing War" by Peter Singer, Foreign Affairs, March 2005, http://www.brookings.edu/printme.wbs?page (accessed September 15, 2005).

55 International Public Management News: US: Study of Contractors In Iraq, "Section 1206 Public Law 108-375 Report, p3-4. http//inpuma.typepad.com/blog/2005/09/us_study_of_con.html (accessed September 15, 2005).

External:

Government Accountability Office (GAO)

The Special Inspector General for Iraq Reconstruction (SIGIR)

DOD Office of the Inspector General (OIG)

The Defense Contract Management Agency (DCMA)

The Defense Contract Audit Agency (DCAA)

Section (b) (1) of the report describes the chain of command and the oversight mechanisms in place for supervision of Contractor employees in security roles. Essentially, the commanders have no contractual agreements with the contractors, so it is imperative that coordination take place in addition to oversight by the respective external agencies.[56]

Another form of accountability is that Contractors are accountable to their employers and subject to market incentives. ". . . Contractors consider how that request might affect their other customers, broader market reputation, and ultimately, their earnings."[57]

Availability of Manpower:

Contracted labor has been used to support numerous major conflicts and non-essential billets in this nation's history, as well as the histories of many other nations. Examples of Contractors cutting and running whether on the battlefield or serving in a shore based billet are few and far between. In the end, there is little reason to doubt that any contracts signed will not be completed as agreed. With that said, there is evidence that the in-house uniform manpower will be much more flexible, readily available and easier to deploy on short notice with the above complement.

Cost:

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[56] International Public Management News: US: Study of Contractors In Iraq, "Section 1206 Public Law 108-375 Report, p 6. http//inpuma.typepad.com/blog/2005/09/us_study_of_con.html (accessed September 15, 2005).

57 Foreign Policy, "Think Again: Mercenaries" by Deborah Avant, http://www.foreignpolicy.com/story/cms.php?story (accessed September 15, 2005).

In spite of efforts to quantify the costs associated with outsourcing (as opposed to insourcing), no clear data exists. In some cases, the contract is clearly cheaper to the alternative of home-growing and maintaining a capability, but there are also examples where the contract may end up costing more money such as in Iraq. Although contracted labor may initially appear to be cheaper, the actual cost differential (more / same / less), however, cannot be known in advance – too many factors are at play (i.e., intensity, duration, security, etc).

Control / Accountability:

Although contracted labor can fill a near-term shortage, the greatest danger can be in the area of control and accountability. At best, contract labor works through a dual chain of command (both the parent company as well as the government); at worst, contract labor only works through the parent company. This can complicate matters for the government official in charge of a particular operation or service.*:*

Contract labor is a necessary component of success. There are no plausible examples of instances where government can possess sufficient in-house resources required to accomplish all tasks. As such, we need to prepare to plug gaps with Contractors when they may be needed. We must therefore do the best that we can to predict the circumstances under which the contract will operate – when the prediction shows that an operation or service will be long, we may realize lower costs by insourcing. But, when the operation is likely to be short in duration with few security risks, contracted labor may work best. This is debatable however.

In any case, contract representatives should ensure that the contracts are written into the position descriptions in such a way as to provide the government with the greatest amount of control over the deployment, policies, procedures and actions of the Contractors.

D. INTERESTED PARTY ANALYSIS

The United States Military is organized for war plans and operations. Operations other than war that include nation building and support are not currently part of the

primary mission of the military. As such, this latter day requirement has proven to be foreign to the military. Nation building, like in Iraq, is best suited to capitalists and the calculated risks they take in economies throughout the world. Capitalism is what builds economies and promotes prosperity amongst those involved. That said, the question of what comes first, prosperity or security is not precisely the same as the "chicken-and-the-egg" question, says Thomas Foley, Director of Private Sector Development of the former Provisional Authority in Iraq. Thomas Foley points out three key factors for the interrelationship between prosperity and security:

> Security and prosperity are related, he said during an interview. With prosperity, people have a stake in the economy. There's a lot more pressure for people not to be disrupted. A second point is that prosperous people have more money to invest in security. They can fund the law enforcement agencies and pay for the infrastructure that ensures the rule of law. But security too, is necessary. Prosperity is hard to start, he noted, if the security environment is such that people are afraid to go to work, or if investors are afraid to put their money at risk. I don't think either could be called the chicken or the egg, he said. It's somewhere between. [58]

Discussion of the link between security and prosperity lends credibility to the link existing today between the U.S. Military and private sector Contractors. The military consistently maintains the ability to turn the spigot on and off for opening and closing contracts with private industry. Big business is happy to expand its revenue streams. Examples of private industry contracts with the Department of Defense (DoD) in Iraq can be found at the U.S. Department of Commerce website www.export.gov/iraq. Contractors do not necessarily have to be limited to cooking meals and cleaning latrines for the battlefield contracts.

The U.S. Department of Commerce provided clear examples in 2004 of monetary figures for military contracts:

a.) U.S. Army – Up to 4.13 billion for contracts with Perini Corp, Fluor-AMEC JV, Lucent Technologies, Parsons Delaware, Inc, and KBR to name a few.

b.) U.S. Navy – Up to 1.7 billion for contracts with Fluor-AMEC JV, Washington International, and Black/Veatch JV.

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[58] "Coalition Encouraging Private Business Growth in Iraq" by Jim Garamone, Armed Forces Press Service,Washington,Feb18,2004. http://www.defenselink.mil/news/Feb2004/n02182004_200402185.html

The Department of Commerce indicated that these contracts were for basic infrastructure like public works and water (Navy) and buildings, education and health (Army) to name just a few.[59]

Necessity of Profit:

Big business characterizes military contracts by projected Returns on Investment (ROI). If the contract ROI does not exceed the company's cost of capital, they will not take it. This makes perfect sense in that it allows the company to maintain financial solvency and to maintain a job base across many different local economies. Exploiting DoD opportunities is fair from the free market perspective. The more profitable the contracts, the greater the likelihood that private companies will join the defense contracting market. In the long run, this would provide a larger pool of contractors for DoD. Additionally, cost-plus contracts enable companies to continue profiting, thereby promoting further growth and expansion of intellectual capital. Growth of the nation's industrial base allows for improved leverage of corporate assets whenever the next contingency operations emerge.

It is an economic necessity that big business profit from dealings with the DoD. If not allowed to negotiate profitable contracts, the pool of contractors and business willing to serve will dry up. Additionally, the more lucrative the contracts, the faster contractors will respond to DoD requests and operations. DoD would only hurt itself if it consistently removed profits from contracts. Doing this would increase the likelihood that companies will either exit the pool of available DoD contractors, or only fill contracts after exhausting all other more profitable jobs.

Contractor Pay:

The pool of contractors available to the military may be constrained by the Area of Operation. In the case of Iraq, contractors earn justifiable wage premiums relative to military personnel. These compensating wage differentials are justified in that contractors responding to work in areas like Iraq get them only while in that area and are easier targets than armed combatants. Compensating wage differentials should exist to

59 "Chart of DoD Prime Contractors" http://www.export.gov/iraq/pdf/dod_prime.pdf, 2004.

attract civilian contractors since corporations would otherwise not be able to order these personnel into hostile environments, unlike what the military can do. The military's hierarchal structure and ownership of personnel via contracts makes it easier to pay lower relative wages while deploying personnel into hostile environments.

National Security:

The Chairman of the Joint Chiefs of Staff, Richard B. Myers, specifically addresses contractors in the "The National Military Strategy of America." He notes that the nation's ability to sustain mobility across a wide range of operations requires "retaining highly qualified people in the Active and Reserve Components as well as within the DoD civilian and contracted workforce." He follows this assertion with an emphasis on the need for "a seamless mix of active forces, the Reserve Component, DoD civilians, and contracted workforce."[60] These statements are the likely result of our nation's position as the global Hegemon.[61] This unique position as the premier world superpower requires it to police others and remain capable of deploying and sustaining assets abroad. From a private company's perspective, DoD must continue to develop ties with private companies in order to innovate and maintain its ability to meet its ever changing mission requirements such as nation building. If not, the military may enjoy less success in future missions, thereby impairing the U.S. position.

Conclusion:

While the United States will clearly remain the world's sole military superpower, the playing field will be economically multipolar, giving the "connected system" of countries the opportunity to vote with their reserve currency choices on competing future visions. As America continues to provide and "outsource" security services throughout the world on global terrorism to try and lead the world to a better place, they are really waging a war on the "disconnectedness" of countries and states not currently in the connected system of states. In other words, we are attempting to connect those countries

[60] Richard B. Myers. "National Military Strategy of America." Office of Secretary of Defense. 2004. pp 16, 23. Found at: http://www.oft.osd.mil/library/library_files/document_377_National%20Military%20Strategy%2013%20May%2004.pdf

61 Merriam Webster's collegiate dictionary (10th ed.), (1993). "Hegemon: Stems from the word hegemony, which is defined as the predominant influence, as of a state, region, or group, over another or others." Springfield, MA: Merriam Webster.

and states that are disconnected culturally and economically from the modernized countries and states, i.e., Afghanistan and Iraq to just name a few.

In order to “connect” or globalize these countries and states, it takes people, energy, investments and security. Before long, private investment will begin to invade Iraq instead of more tanks and they will begin to become more connected to the modernized world. Contractors will play a vital role in achieving a successful outcome in situations like Iraq as war is waged on terrorism and these disconnected countries and states begin to become globalized into the modern world as well as providing a needed service on shore commands. Contractors always have and always will continue to provide an integral part of our military culture, especially with what remains in our future.

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IV. OUTSOURCING TOOLS

A. OVERVIEW

Business Cases and Business Case Analyses (BCAs) have become a fact of life for DoD Program Managers. Used well, they can do much to make sense of the very difficult environment of contemporary defense management.[62] For example, Navy Medicine recently converted 1,772 non-essential military billets to civilian or contract positions during FY2005.[63] The Navy Surgeon General's personnel programmers and ongoing studies regarding military readiness requirements suggest that this conversion is just the beginning of ultimately converting a total of approximately 5,415 identified as "non-essential shore based billets" by the Total Health Care Support Readiness Requirement (THCSRR) and Navy Medicine.

This shift in resource allocation or "transformation" initiated in 2001 by the Department of Defense Secretary, Donald Rumsfeld is designed to serve as a catalyst towards a more effective and efficient DoD. Navy Medicine's manpower and resource management experts have been working with representatives from the Medical, Dental, Medical Service, Nurse and Hospital Corps Chiefs/Director's offices, and the Center for Naval Analyses (CNA) to develop the economic analyses needed to achieve the goals of a more efficient and effective human capital strategy. In addition to the 1,772 military to civilian conversions in FY2005, Navy Medicine successfully integrated their Dental Treatment Facilities (DTFs) with the Medical Treatment Facilities (MTFs) and merging all Dental Technician's with the Hospital Corpsman into a single rate.

These initiatives are very much in line with the Navy's FY2004 human resource philosophy, which includes maximizing civilian and contract personnel for non-essential positions. The conversion of these positions will help alleviate the stress that has been

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[62] Raymond E. Franck, (2004). *Acquisition Research Sponsored Report Series: Business Case Analysis and Contractor vs. Organic Support: A First-Principles View.* Retrieved 13 October 2005 from Naval Postgraduate School Library Web site: http://www.nps.navy.mil/gsbpp/ACQN/publications/FY04/AM-04013.pdf

[63] Program Budget Decision (PBD) 712, *Military to Civilian Conversions*, directed that a total of 20,070 DoD-Wide military positions be converted to civilian positions between FY04 and FY05. The Navy's Defense Health Program was directed to convert a total of 1,772 military billets as part of the total 20,070 conversion target

put on the operating forces and ensure that military personnel are used to perform the tasks that are military essential.[64] Furthermore, the PBD 712 also states the increased operational tempo of the U. S. forces and current fiscal constraints requires the DoD to make maximum use of its human resources and to ensure that military personnel are used to perform tasks that are "military essential."[65]

In this era of new complexities, new mandates and worrisome resource constraints, it is especially important that defense analysts and managers of all types, but Program Managers especially, make resource-allocation decisions informed by solid analysis. BCAs are intended to provide that basis.[66]

A BCAs purpose is to develop a business process improvement as a key strategy and management tool, capable of supporting an organization's vision, mission, goals and objectives. However, in this new environment created within DoD, the aim of an analysis should be to produce "a quantum leap in performance and effectiveness." Historically, BCAs have produced huge results for businesses implementing new work processes that fit into their existing structure. Their success has depended on whether or not they took the time to study the useful analytical methods given to them from an effective BCA. A BCA on contracting dental specialties will be no different.

This chapter will discuss theoretical foundations of methods used for BCAs in Section B that will include; problem-solving, an input-output analysis, Transactions Cost Economics (TCE) and Cost Benefit Analysis (CBA). Section C will discuss an overview of manpower calculations and methods in the first section followed by the A-76 process and conclude with a risk assessment method as proposed by a recent NPS thesis. This discussion will reference heavily from Franck and his sponsored report series on First Principles View of Outsourcing.

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[64] Former Surgeon General of the Navy, "Defense Subcommittee Hearing on Medical Programs Testimony," 2004, http://appropriations.senate.gov/hearmarkups/record.cfm?id=220818/ [28 April 2004].

[65] Program Budget Decision (PBD) 712 (2003). *Military to Civilian Conversions*, Department of Defense, Washington, DC.

[66] Raymond E. Franck, (2004). *Acquisition Research Sponsored Report Series: Business Case Analysis and Contractor vs. Organic Support: A First-Principles View.*

B. THEORETICAL FOUNDATIONS

1. Structuring and Solving Problems

Let us take a look at Professor Franck's five-step method with notes:

a. Understand the problem: Possession of a clear statement of a difficult question and considerable relevant expertise does not guarantee sufficient understanding to reach the best solution. It's important first to thoroughly understand the context. To take a very simple example, suppose our "problem" is to insert a fastener in a block of wood. If at first inspection the fastener appears to be a nail, it is natural to consider the alternatives that involve hammers. If a closer look reveals the fastener is a screw, then it's apparent the hammers in our toolbox are less useful than the appropriate screwdriver. That is, lack of understanding can greatly affect the solution.[67]

As such, understanding the objectives is critical. However, the analyst must also identify the optimal outcome in order for the process of outsourcing to have a positive effect on either efficiency or effectiveness. For the purpose of this study, the problem is identified as a shortage of military dentists because the programs for recruiting and the special pays and bonuses for retaining them are not working. Therefore, the optimal outcome for outsourcing civilian Endodontists is to assist commands immediately for manpower due to the shortage and be more cost effective than the current structure as I will demonstrate in next chapter.

b. Develop Alternatives: If we understand the problem, then we can consider useful ways to solve (or at least mitigate) the problem's negative aspects. Typically, a number of alternatives are available. They are best understood as "courses of action" or "programs," not as titles. Accordingly, it is useful to develop (as outlines) alternatives suitable for plans which are executable.[68]

The Navy spends more money on incentives and other costly programs in order to try and attract dentists in order to fulfill their mission. So far, the incentives and programs are falling short of the set goals. This current trend may suggest that Navy Medicine look into another alternative such as outsourcing.

[67] Raymond E. Franck, (2004). *Acquisition Research Sponsored Report Series: Business Case Analysis and Contractor vs. Organic Support: A First-Principles View.*

[68] Ibid.

c. Predict Consequences: Consequences should be associated with each alternative. Consequences typically are manifested in both effectiveness (what's gained) and costs (what's given up or risks incurred). While alternatives in real problems have a large number of consequences, some tell more about achieving the objectives than others. In many complex problems, prediction involves modeling, a formal process of relating key features of the alternatives to their important consequences.[69]

The goal for this thesis is to develop a tool and step-by-step process for the Dental Corps to do a Business Case Analysis (BCA) of their specialties that links well with this particular rule.

d. Assess the Consequences: The analyst should then assess the consequences associated with the alternatives. This may be relatively easy or quite difficult. Alternatives, which are less effective and more costly than others, are said to be "dominated," and are not candidates for implementation. Similarly, if all available alternatives are equally costly (or equally effective), then the most effective (or least costly) alternative is clearly best.[70]

Thus far, the alternatives chosen by the Dental Corps for recruiting and retaining dentists are looking to be considered as "dominated." This suggests that the Dental Corps should begin to look at alternative methods to accomplish the mission.

e. Make a Decision (Or, provide a recommendation). In many respects, this phase of the process involves reconsideration and review of the entire process, especially the quality and relevance of the analysis. It is useful to consider whether further iterations of the process are useful. If the analysis includes assumed, or baseline, values of key parameters, it is important to consider how results vary (if at all) with different values of those parameters (sensitivity analysis).[71]

This study intends to use each of these rules in basing a recommendation for outsourcing shore based non-essential specialty billets. In summary, this study will base

69 Raymond E. Franck, (2004). Acquisition Research Sponsored Report Series: Business Case Analysis and Contractor vs. Organic Support: A First-Principles View.

70 Ibid.

71 Ibid.

a recommendation on the analysis conducted. This study's hypothesis is that further analysis will not improve the quality of my conclusion. At that time, I can then make my best decision and/or recommendation to Navy Medicine's decision makers.

2. Input-Output Analysis

Input-Output analysis originated as a method of studying the operations of an entire economy. It postulates a number of sectors (or industries) and a number of primary factors of production (the most important being labor). The primary factors (or inputs) support the various industries. Industries support each other; intermediate goods flow within industries and between industries. Thus, for example, a finished automobile may have an engine supplied by another automobile firm, and tires purchased from the rubber products industry. Every primary input is supplied to the goods-producing sectors. Labor services are part of every industry's production process.[72]

This study will use the military input-output model that is similar, but more hierarchical and simpler. For example, if we use four sectors: Capability designated as (C), Infrastructure designated as (I), Manpower designated as (M) and Support designated as (S), the model would resemble Table 5 below:

Table 5. A Military Input-Output Model

Sectors	C	S	I	M	Final Demand	Total Output
Capability (C)	$\mathbf{a}_{CC}$	0	0	0	F_C	Q_C
Support (S)	$\mathbf{a}_{SC}$	$\mathbf{a}_{SS}$	0	0	0	Q_S
Infrastructure (I)	$\mathbf{a}_{IC}$	$\mathbf{a}_{IS}$	$\mathbf{a}_{II}$	0	0	Q_I
Manpower (M)	$\mathbf{a}_{MC}$	$\mathbf{a}_{MS}$	$\mathbf{a}_{MI}$	$\mathbf{a}_{MM}$	0	M

72 Raymond E. Franck, (2004). Acquisition Research Sponsored Report Series: Business Case Analysis and Contractor vs. Organic Support: A First-*Principles View.*

The model shown above has four sectors. The Capabilities Sector delivers to Final Demand and the Capabilities Sector itself. The Support Sector provides support for the Capabilities Sector and itself. The Infrastructure Sector delivers to the Capabilities and Support Sectors, as well as itself. Lastly, the Manpower Sector supports all of the other Sectors as well as itself.

We can now include the equation for using contractor services instead of in-house activities with the exception of the Capability Sector and have outputs as shown below:

$$Q_C = (1-\mathbf{a}_{CC})\, Q_C + F_C$$

$$Q_S = Q_{SO} + C_S = \mathbf{a}_{SC}\, Q_C + \mathbf{a}_{SS}\, Q_S$$

$$Q_I = Q_{IO} + C_I = \mathbf{a}_{IC}\, Q_C + \mathbf{a}_{IS}\, Q_S + \mathbf{a}_{II}\, Q_I$$

$$M = M_O + C_M = \mathbf{a}_{MC}\, Q_C + \mathbf{a}_{MS}\, Q_S + \mathbf{a}_{MI}\, Q_I + \mathbf{a}_{MM}\, M_O,$$

Now, we can solve the system of equations above:

$$Q_C = F_C / (1-\mathbf{a}_{CC})$$

$$Q_{SO} = F_C * \{\mathbf{a}_{SC} / [(1-\mathbf{a}_{CC})\,(1-\mathbf{a}_{SS})]\} - C_S$$

$$Q_{IO} = F_C * \{\mathbf{a}_{SC}\,\mathbf{a}_{IS} + \mathbf{a}_{IC}\,(1-\mathbf{a}_{SS})\} / \{(1-\mathbf{a}_{CC})\,(1-\mathbf{a}_{SS})\,(1-\mathbf{a}_{II})\} - C_I$$

$$M_O = \{F_C\mathbf{a}_{MC}/[(1-\mathbf{a}_{CC})\,(1-\mathbf{a}_{MM})]\} + \{F_C(\mathbf{a}_{MS}\mathbf{a}_{SC})/[(1-\mathbf{a}_{CC})\,(1-\mathbf{a}_{SS})\,(1-\mathbf{a}_{II})\}$$

$$+ \{F_C\mathbf{a}_{MI}\mathbf{a}_{IC}/[(1-\mathbf{a}_{CC})\,(1-\mathbf{a}_{SS})\,(1-\mathbf{a}_{II})]\}$$

$$+ \{F_C\mathbf{a}_{MI}\mathbf{a}_{IS}\mathbf{a}_{SC})/[(1-\mathbf{a}_{CC})\,(1-\mathbf{a}_{SS})\,(1-\mathbf{a}_{II})\,(1-\mathbf{a}_{MM})]\} - C_M/(1-\mathbf{a}_{MM})$$

The results above show that the total level of activities in the Capabilities Sector depends directly on the operational capabilities delivered. Also, appropriate levels of activity in the Infrastructure and Support Sectors depend on operational capabilities required and to the extent by which military activities are replaced by contractors.

The model indicates there are both direct and indirect military manpower reductions when hiring contractors. Directly, contractor support leads to replacing military manpower in the affected community; indirectly, there is a reduction in the

personnel support side of the house. Personnel support could be administration, personnel, recruiting and training, and so forth.

However, contractors will have personnel support issues as well. Also, those requirements will be similar to those of military manpower. However, support requirements for contractors are included in the contract proposal.

In conclusion, this model will attempt to demonstrate the real savings that can be achieved in personnel support for contractors that is above and beyond those not directly involved in the military manpower.

3. Transactions Cost Economics

There is a private-sector counterpart to the choice of support-service sourcing with organic assets or contractors. It has become a standard part of economic theory. The seminal work is generally acknowledged as coming from Ronald Coase in 1937. If most productive tasks can be accomplished with greater efficiency elsewhere, then what reason would firms in search of profit have to produce those goods and services within the enterprise boundaries? The answer to the question is that going to the market to acquire such goods and services carries with it certain "transactions costs," which might turn out to be greater than the added costs associated with production in-house. Thus, study of make-or-buy decisions and similar issues is often called "transactions cost economics."[73]

The make-or-buy decision can bring disadvantages for organic assets. For example, firms specialize in their area of producing or performing goods and services because the probability is that the firm is economically efficient at this process. In a competitive market, a firm must be good at this with their assets and must operate their business efficiently. If not, it would be wise to consider contracting the item or service for less money.

Keeping goods or services in-house can also bring additional costs such as "agency" and "influence" costs. If the firm has a protected customer base, there will be

73 Raymond E. Franck, (2004). Acquisition Research Sponsored Report Series: Business Case Analysis and Contractor vs. Organic Support: A First-Principles View.

less incentive to improve the quality or efficiency of the product or service. Thus, performance is an ongoing concern and ensuring peak performance occurs takes management oversight and oversight comes with a cost due to commitment of resources. This particular cost could be avoided by outsourcing the product or service. The possible distortions of corporate decision-making that can lead to losses through competition or profit are referred to as influence costs, and must be considered when maintaining organic assets vice outsourcing.

However, there are disadvantages to outsourcing as well of course. Coordination is important if outsourcing a particular product that requires a just-in-time delivery. If it is a service required, such as a dentist's specialty, coordination is not a factor. Defining actual transactions costs depends on the chosen outsourced product or service explicitly. On one hand, outsourcing a major IT network such as the NMCI would involve a long-term and highly complicated agreement, as it has. On the other hand, outsourcing for a unique expertise such as a dentist's specialty may provide monopoly power because there are no substitutes for the services required. This may cause vulnerability to opportunistic behavior from the contractor and they very well could exploit their power by demanding renegotiating of the contract or dissolve the agreement altogether. In Transactions Cost Economics, this is referred to as a "holdup."[74]

Vulnerability to a "holdup" can be significantly decreased with the implementation of a well-crafted contract however. Also, the contract will need to be reviewed annually at the minimum in order to try and avoid any possible "holdups." Furthermore, the firm must keep in mind that contracts cannot completely hedge against risks of opportunistic behavior. So, it would be advantageous on the part of the enterprise that's outsourcing to have some sort of risk reduction capability in place. In the situation with the Dental Corps, active duty dentists will always be part of the military health care system's safety net. Contractors will involve complimenting active duty manpower, not replacing it.

As posited by Professor Franck in his work and the conventional wisdom provided by most of the literature dealing with transactions costs, the standard bottom

74 Raymond E. Franck, (2004). Acquisition Research Sponsored Report Series: Business Case Analysis and Contractor vs. Organic Support: A First-Principles View.

line is that the decision to outsource should not be taken lightly. While the potential production-cost savings may well be tempting, there are associated costs and risks, albeit less obvious. They are less important (and might be negligible) for simple, one-time transactions where alternate suppliers are readily available. They can be critically important when the outsourcing arrangement is such that there is only one supplier readily available in a complex and lengthy relationship.[75]

Hence, the decision to outsource must weigh production cost savings against the costs and risks associated with a critical source of supply being outside the firm's control. Those are generally referred to as the transactions cost of the outsourcing relationship. Thus, outsourcing is preferred only if the total costs are less than the costs of production with the firm's (in-house, organic) assets. A firm should outsource only if the following is true:

Cost of in-house production > Outsourcing + Transactions Costs.[76]

4. Cost Benefit Analysis (CBA)

CBA is a well-defined method to "appraise an investment project which includes all social and financial costs and benefits." It is the subject of extensive literature that includes standard textbooks such as Boardman. The basic foundation of standard CBA methods is total willingness to pay. The basic criterion for the assessment is simple (perhaps deceptively so):[77]

Net Benefit = Benefits – Costs.

The complicated task is finding all the benefits and costs, which entails a detailed and systematic analysis. One industry standard for the major steps in a well-done CBA comes from Boardman,[78] and is summarized as follows:

75 Raymond E.Franck, (2004). Acquisition Research Sponsored Report Series: Business Case Analysis and Contractor vs. Organic Support: A First-Principles View.

76 Ibid.

77 Ibid.

78 Anthony E. Boardman, et al (2001). Cost-Benefit Analysis: Concepts and Practice. New Jersey: Prentice Hall.

1. Specify the set of alternative projects.

2. Decide whose costs and benefits count. Who has "standing," or is a legitimate stakeholder?

3. Catalog impacts, and select metrics.

4. Predict the impacts over the life of the project.

5. Attach monetary values to all impacts.

6. Discount benefits and costs for each alternative to Present Values (PV).

7. Calculate the Net Present Value (NPV) for each alternative.

8. Perform an appropriate sensitivity analysis.

9. Make a best-value recommendation based on the NPV and the sensitivity analysis.[79]

Completed CBAs can then support decisions, using the following general rules:

1. A project is worth doing (valid) if its net benefits are positive: i.e., benefits exceed costs.

2. A project that can be undertaken at various levels should be expanded as long as incremental benefits cover incremental costs.

3. The alternative (or strategy) with highest net benefit offers best value and is, therefore, preferred.[80]

C. MANPOWER CALCULATIONS AND METHODS

1. Overview

The Navy uses the OPNAVINST 1000.16J for all manpower concerns and requirements. This instruction is the "go-to" manual for providing guidance and procedures to develop, review, approve and implement total force manpower requirements and authorizations for all naval activities.

[79] Raymond E. Franck, (2004). Acquisition Research Sponsored Report Series: Business Case Analysis and Contractor vs. Organic Support: A First-Principles View.

[80] Raymond E. Franck, (2004). Acquisition Research Sponsored Report Series: Business Case Analysis and Contractor vs. Organic Support: A First-Principles View.

Requirements for naval activities are based on the minimum manpower needed to perform the task needed for the mission of the unit. The nature of the tasks determines manpower quality specified in terms defined by ratings, grades, subspecialties and classification codes. The definition of these tasks to be performed is written out in detail through the Command's Mission, Functions and Task Statement (MFT) or the Required Operational Capability/Projected Operational Environment (ROC/POE). For example, the OPNAVINST 5450.215B shows how the Chief of Naval Operations exercises authority by specifically defining the mission and functions for the Bureau of Medicine and Surgery. This is just a portion of how workload is determined and how the Navy places "faces" into "spaces."

Tasks are assigned a justifiable number of work hours and each command has a "standard Navy work week" that is defined in either the MFT or the ROC/POE. For example, a shore activity has a standard work week of 40 hours as written in the MFT. The 40 hours are defined as 33.38 hours for planning purposes and the remaining 6.62 hours are for training, service "diversion," leave and holidays. In addition, suppose that a Naval Hospital must maintain a watch at the front desk continuously for a 24-hour period and that it requires three persons to do it (168 hours per week). The manpower required to accomplish this particular watch would be 15.10 (168*3/33.38 = 15.10).

As such, manpower requirements of naval activities are all pieced together through a number of sources and building blocks, each of which is equally important. Each activity's manpower requirement is recorded on the Activity Manpower Document (AMD), which is the sole authority for these particular requirements. The AMD is the qualitative and quantitative expression of manpower requirements and authorizations allocated to a naval activity to perform the assigned MFT statement or ROC/POE. Total force requirements are tracked using the Total Force Manpower Management System (TFMMS), which is the single, authoritative database for total force manpower requirements and authorizations and end strength. A change to a command's workload, rating or nature of task would require a Total Force Micro Manpower Change Application (TMMCA) be submitted for approval so that the appropriate changes are

reflected in the AMD. Navy Medicine has also implemented the Total Health Care Support Readiness Requirement (THCSRR) to assist in the process and compliment TFMMS.

The manpower authorization process is not as specific, per se, as the requirements process. A manpower authorization describes a manpower requirement supported by approved funding and end strength. Authorizations are a reflection of claimant choices and resource sponsor funding. They are the basis for the planning and distribution of military personnel inventory and represent estimates for use in planning and programming through TFMMS and the AMD. Therefore, assigned personnel can never exceed authorized personnel as set by the Officer Program Authorization and Enlisted Program Authorization approved biannually by the Deputy Chief of Naval Operations for Manpower, Personnel, Training and Education.

Upon examination, the previously discussed input-output perspective that was discussed previously closely resembles the manpower requirement process. For example, ships home ported in Pearl Harbor, Hawaii have a defined mission directly related to providing operational capability, while shore based units have a sole function of supporting the operational ships. A large portion of that support is related directly to the operational ships particular missions; Naval Medical Clinic Hawaii is just one example. Therefore, suppose that the Navy decides to downsize the number of ships home ported in Pearl Harbor. As a result, the AMD of Naval Medical Clinic Hawaii would be recalculated, based on the change in the scale of tasks to be performed due to the downsizing of the operational ships. This is the "multiplier" property of the input-output model that was discussed previously.

Likewise, if Naval Medical Clinic Hawaii were to outsource some of their position descriptions and billets to contractor personnel, then the manpower requirements would need to be recalculated for the AMD just as they were in the previous example. As discussed earlier in the chapter, THCSRR has identified military position descriptions and billets to be replaced by contractor personnel. Thus, this exact scenario has already transpired in some of the MTFs in the Navy. THCSRR has given Navy Medicine a manpower database that can perform the calculations as described above quickly and

accurately. As following sections will show, a good Human Resources Information System (HRIS) is vital to the success of the organization.

The extent to which the AMDs of operational units are explicitly tied to the AMDs of their supporting units is not clear. Likewise, it is not clear to the extent at which changes in the AMDs are explicitly tied to the TFMMS.[81] This statement expresses where the majority of Navy activities are in the world of manpower and HRIS. However, a review of the current plans and programs suggests that Navy Medicine is definitely ahead of the pack in regards to versions of HRIS used in the Navy, making them relatively more effective and efficient.

BUMED and Navy Medicine have always used various forms of an HRIS through the years for different reasons. In the beginning however, templates existed through stovepipe means for various purposes, but they have now integrated most of those systems into programs that all medical personnel can use for the greater good. A solid example of this is the Expeditionary Medicine Platform Augmentation Readiness Training System (EMPARTS) and THCSRR.

EMPARTS and THCSRR were developed specifically for strategic purposes and have thus far performed flawlessly together in the manner that they were designed for. THCSRR identifies the minimum number of Navy medical personnel to support the military's missions while balancing Navy Medicine's dual missions – force health protection and beneficiary care. As such, many medical personnel are assigned to shore-based billets to support the beneficiary mission; however, they must be ready to mobilize on short notice to support the force health protection mission. The use of component unit identification codes (CUICs) has facilitated the assignment of medical personnel in a manner that identifies the unit they will support during mobilization. Consequently, BUMED needs to track and maintain information on personnel to ensure the highest level of readiness.

EMPARTS is the Human Resource Information System (HRIS) currently employed to assist in maintaining the readiness of all BUMED personnel. EMPARTS

[81] Raymond E. Franck, (2004). Acquisition Research Sponsored Report Series: Business Case Analysis and Cont*ractor vs. Organic Support: A First-Principles View.*

was implemented on 1 October 2002 as a web-based database developed to enhance readiness reporting. It was designed as an interim solution and its functionality will be incorporated into the Defense Integrated Military Human Resources System (DIMHRS). Initially, EMPARTS sought to track readiness status including: percent of billets filled, training of assigned personnel, readiness of CUICs and individual, as well as administrative requirements.

The functionality of the system is constantly enhanced based on user input. Two broad view categories are available – a command-level view and a headquarters-level view. In the command level view, information is only available for a specific command. The headquarters-level view provides aggregate information on all commands with the ability to view specific command-level information. The headquarters-level view is available to BUMED Headquarters and non-BUMED Headquarters (i.e., MARFORLANT) that have a need to track personnel within their command.

Personnel assignments within EMPARTS are driven by unit identification code (UIC) and billet sequence code (BSC). Since officers are detailed by UIC and BSC, the platform assignment is straightforward; however, enlisted personnel are detailed only by UIC. Therefore, a thorough understanding of the AMD is required to ensure the appropriate assignment to meet the BSC requirements. Furthermore, TFMMS are uploaded automatically at the headquarters level. Unfortunately, personnel platform assignment discrepancies created by TFMMS changes must be manually corrected at the command level. However, this still exceeds most naval activities.

At the individual level, EMPARTS stores information concerning the person's demographic information, readiness elements, training information, platform assignment, uniform and gear sizes. The information is used to calculate readiness indicators for administrative requirements, training requirements, and medical/dental requirements for each individual. At the platform level, EMPARTS aggregates the individual data to provide readiness indicators for the overall platform based on the same requirements. The aggregated platform readiness is then displayed in a dashboard metric format for each command. As members transfer from one command to another, their information is removed from their previous command; however, it is retained in the database and is

available for the next command to accept them without losing their information. Hyperlinks are provided throughout EMPARTS to provide easy navigation to the desired information. In addition, EMPARTS also provides several query options to create ad hoc reports to assist in managing readiness.

The dynamic and ever-changing functionality of EMPARTS has significantly enhanced operational readiness reporting within BUMED fulfilling the goal of having a strategy-based system for Navy Medicine. Previously, each command maintained information on their personnel in isolation and headquarters had no mechanism to verify the accuracy of readiness reports. Given the current operational environment especially, EMPARTS is an exceptional HRIS designed primarily for medical readiness, but its design and capability have made it adaptable in the current and upcoming challenges for today's transforming Navy.

The Dental Corps is obviously a part of EMPARTS and THCSRR, but they designed an HRIS specifically for dental functions and needs as well, "The Dental Common Access System (DENCAS)." The U.S. Navy Medical Information Management Command (NMIMC) and the Bureau of Medicine and Surgery (BUMED) saw a need to develop an HRIS to gather Dental readiness and productivity information for all of the Navy's Dental Department's. The Department of the Navy's Smart Card Office (DONSCO) funded the project because it had the capability to use digital certificates stored on DoDs Common Access Card (CAC). DONSCO, NMIMC and BUMED all worked closely with the private contractor, MAXIMUS, on this one-year project.

The system is comprised of a web-based application with a centralized database. Public Key Infrastructure (PKI) is used to provide non-repudiation of a user's identity with the subsequent permissions structure being database driven. The DENCAS system was developed in September of 2000, and was deployed in June of 2001 for beta testing at a number of selected pilot sites.

Prior to DENCAS implementation, Navy dental patient treatment and productivity data was collected from over 400 commands in separate standalone MS-DOS databases identified as the Dental Management Information System (DENMIS). The productivity

data was sent to a centralized location monthly (BUMED) with the patient treatment data available only to the command from which it was generated. Data being transmitted was not protected by encryption, thus anyone able to intercept it could view it. Now, dental personnel are able to access DENCAS through their normal Internet connection and by utilizing their digital certificates to achieve a secure logon. The digital certificates are used to identify the user who is then associated with user permissions stored in the database. The user can then view patient information to which they have access for (identified by the UICs & CUICs).

For the first time, corporate users at BUMED have a headquarters level view to Navy-wide patient treatment and productivity data. This capability allows for immediate and accurate determination of U.S. Navy Dental readiness, something that once took over a month's worth of data collection and processing from the dental commands to compute.

Prior to DENCAS, all patient and productivity data was collected and stored at each individual dental command in the previous HRIS, DENMIS. The distribution of data both upward to corporate users at BUMED and downward to customer command users required numerous paper printouts of data. This collection and process of data was cumbersome, tedious and time consuming. The result was usually inaccurate by the time it reached BUMED because dental readiness data can fluctuate from hour to hour.

This system has been made useful for both the command level view and the headquarters level view for BUMED, which is not always an easy task. At the command level view, the Dental Liaison's are able to view their respective UICs & CUICs dental readiness and obtain a list of individuals who need a dental exam, or any other procedure for that matter. Also, BUMED can view patient and productivity data either Navy-wide or scroll down to a specific command's data. This means that unit deployability and dental readiness information is now in a secure, central database and continuously available for real time analysis by operational brass. This dental readiness review was not possible at a reasonable cost previously to DENCAS being implemented.

DENCAS has relieved dental commands from the chore of generating the old and tedious monthly reports. This means that the Hospital Corpsman (former Dental Technicians) previously assigned to clerical duties have now had time and paperwork

reduced, thus freeing them for other duties in the clinic. This shift from clerical assignments to patient care has not only improved the quality of care, but has also enhanced the productivity of the staff.

The above examples are how Navy Medicine leads the Navy in HRIS for decision-making. As suggested by this discussion, a good HRIS is critical for success in any organization. Moreover, there are at least three examples of why Navy Medicine is successful, effective and efficient.

2. A-76 Process

OMB Circular A-76 documents policies of the US Government for the "performance of commercial activities." It requires activities which government personnel perform to be classified as "commercial" or "inherently-governmental." All activities in the latter category are to be performed with government personnel (organic assets). Activities in the former category are "subject to the forces of competition."[82] As outlined by Professor Franck in his BCA report,[83] the competition process is summarized below:

1. Inventory agencies activities, classify them as commercial or governmental, and determine how the competition(s) are organized ("bundled").
2. Announce intention to undertake an outsourcing study, both to the affected government work force and to potential commercial sources.
3. Develop and announce the terms of the competition to include expectations (Performance Work Statement, PWS), various study teams, and a quality assurance plan (QASP). Criteria for source selection are also specified.
4. Issue a solicitation, or Request for Proposal, seeking bids from the commercial sector.

[82] Raymond E. Franck, (2004). *Acquisition Research Sponsored Report Series: Business Case Analysis and Contractor vs. Organic Support: A First-Principles View.*

[83] Ibid.

5. Develop the in-house alternative (Most Efficient Organization). This consist of a management plan, cost estimate, performance plan, and transition plan. This alternative is one of the finalists.
6. Compare the Most Efficient Organization (in-house) with the qualified commercial proposals (outsourced) generally in terms of cost of meeting the terms of the PWS. (However, the contractor's proposal must meet a minimum cost differential: 10 percent, or $10 million (whichever is less).)
7. Award the contract (issuing agreement), after appeal if applicable.
8. Transition to the in-house organization (if applicable) or to the winning commercial source.
9. Conduct post-award contract administration (if applicable) and quality assurance.[84]

The provisions of A-76 are not formulated with organic vs. contractor support of new systems in mind. However, the essentials of the process provide useful benchmarks, regardless of the outsourcing decision at hand. These essentials are listed below:

1. Fully understand the context of the decision. The performance of the activity in question affects capability (perhaps directly) and the performance of other organizations. Performance categories and impacts of that performance should be carefully and specifically noted. In the A-76 process, this is embodied in the PWS.
2. Fully develop the relevant alternatives.
3. Specify the consequences of selecting each of them. In particular, A-76 provides guidance for determining full costs of the alternatives.
4. Assess the consequences. The A-76 base case for comparison and assessment is cost of meeting the standards of the PWS.

[84] Raymond E. Franck, (2004). *Acquisition Research Sponsored Report Series: Business Case Analysis and Contractor vs. Organic Support: A First-Principles View.*

5. Make a decision and implement it. This phase includes awarding the contract or issuing an agreement. It also includes any appeals, and actions associated with executing the PWS with the chosen provider.

3. An Outsourcing Risk Assessment

A former NPS student[85] proposes a method for managers to assess the risks associated with a proposed outsourcing action in his thesis. Basically, aspects of the new relationship are related with a stoplight scheme. For example, if there is a high degree of asset specificity involved, there would be a red light in that category, and a higher degree of risk indicated. Powell intended the light scheme to increase visibility of areas where management attention is important, and where managers ought to focus their risk-reduction efforts.[86]

That application is certainly valid, but there's another wrinkle. The study of Transactions Costs Economics indicates that risk-reduction measures (even if highly effective) are not risk-elimination panaceas. Accordingly, one can expect an overall outsourcing action with a large number of assessed red and yellow lights will be more costly and risky during its execution, even with due diligence in risk reduction.[87]

What follows is a variation of Powell's stoplight scheme using the proposal of outsourcing Endodontists as an example of how the assessment would work.

a. **Asset Specificity.**

RED. Source becomes specialized, with no close substitutes or competitors readily available. Example: only qualified supplier for a specific, highly-specialized task.

GREEN. Routine (non-specialized) goods or tasks; competitors or close substitutes readily available. Example: purchase of standard commercial items, such as paper clips and other office supplies.

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[85] Craig A. Powell, (2002). *Transactions Cost Economics and A-76: A Framework for Defense Managers (Thesis).* Retrieved 13 October 2005 from Naval Postgraduate School Library Web site: http://www.nps.navy.mil/gsbpp/ACQN/publications/FY02/AM-02013.pdf

[86] Raymond E. Franck, Raymond C. (2004). *Acquisition Research Sponsored Report Series: Business Case Analysis and Contractor vs. Organic Support: A First-Principles View.*

[87] Ibid.

Endodontics is a specialized field within the dental community. However, competitors with close substitutes are readily available via civilian private practice. Therefore, asset specificity would be a green light.

b. **Complexity.**

RED. A large-scale task covering a large geographic area. Complexity of task severely limits qualified bidders. Example: large-scale, complex IT support; such as NMCI.

GREEN. A simple, routine task or standard product. A large number of qualified bidders. Example: office supplies.

The task of hiring civilian Endodontists would cover a large geographic area, but each contractor would be hired through specific Commands in separate Areas of Responsibility (AOR). The geographic locations of MTFs throughout the Continental United States (CONUS) gives the Navy an advantage for hiring contractors because of the large number of qualified bidders (civilian Endodontists) that would be available in an area such as San Diego, California, for example. The complexity of this proposed task would be a green light.

c. **Length of Relationship.**

RED. A long-term relationship, which strains ability to foresee problems during original contract negotiations. Complexity and asset specificity exacerbate this problem. Example: IT support, such as NMCI.

GREEN. Outsourcing is a one-time transaction, or can be structured as a series of one-time transactions. Example: purchase of office supplies.

One of the advantages to outsourcing is the flexibility of a contract. The Navy can custom design each contract the way that they desire, as long as the contractor agrees to the contract itself of course. However, a contract can be negotiated and doesn't have to be long-term as described above. Thereby, making the length of relationship a green light.

d. **Frequency.**

RED. Specialized, complex task or service from which there is significant learning-by-doing. Incumbent contractor has significant

competitive advantage over potential competitors. Example: contract maintenance for specialized aircraft, such as E-4s.

GREEN. Routine, standard task, service or product, in which a number of firms have significant expertise. Example: copy machine repair.

Granted, endodontics is not as routine as a copying machine. There are a number of civilian Endodontists that would be available and interested in each billet that we wanted to fill throughout the MTFs located inside the CONUS. Therefore, Endodontists under contract with the Navy would not require significant advantages over potential competitors. Frequency would be considered a green light as well.

e. **Time Sensitivity.**

RED. Quick performance of task or delivery of product is essential for satisfactory performance. Example: repair of combat aircraft, or warship subsystems.

GREEN. Quick delivery of products or accomplishment of task is not essential for satisfactory performance. Satisfactory performance can include some delays. Example: copy machine repairs.

Of course, accomplishment of task is important. However, the delivery of task for an Endodontist is not as time sensitive for satisfactory performance as demonstrated using the repair of combat aircraft above. Each contractor would need to complete a number of tasks per month for each Commands dental readiness. But, this particular contractor would be categorized as green, given the definitions above.

f. **Operational Significance.**

RED. Unsatisfactory performance significantly degrades operational capability or compromises safety. Example: repair of combat aircraft or warship subsystems.

> GREEN. Unsatisfactory performance involves, at most, administrative inconvenience and longer time to accomplish routine tasks. No compromise of operational readiness or safety. Examples: delays in copy machine repairs and temporary lack of office supplies.[88]

The operational significance of this particular task would be critical if a Sailor wasn't treated for a root canal prior to deploying on a submarine. However, the majority of the endodontic cases that you will see in the fleet for example give a command ample time to complete a root canal before a Sailor deploys. Therefore, most cases for this particular situation would not compromise operational readiness resulting in the green light category.

88 Raymond E. Franck, (2004). Acquisition Research Sponsored Report Series: Business Case Analysis and Contractor vs. Organic Support: A First-Principles View.

V. COST BENEFIT ANALYSIS (CBA) MODEL AND RESULTS

A. OVERVIEW

The United States Navy Dental Corps is having difficulty recruiting dentists and retaining the junior and mid-grade Dental Corps Officers. Despite aggressive efforts to improve Dental Corps recruitment and retention, the annual loss rate increased from 8.3% in 2003[89] to 12.9% for 2005.[90] In addition, declining retention rates have negatively impacted applications for Graduate Dental Education (GDE) residency training programs, which have dropped 18% over the last five years.[91] The Navy relies heavily on this group of officers to fill operational billets at sea, supporting the United States Marine Corps and Medical Treatment Facilities overseas.

In addition to the accession programs already mentioned in Chapter II, the factors indicated above have forced the Dental Corps to use alternative programs such as the Health Professions Scholarship Program (HPSP) and the Financial Assistance Program (FAP)[92]. The programs above cost the Navy over 10 million dollars a year, but necessary to attract dentists in the Navy. As stated throughout this analysis, the Dental Corps should consider concentrating their resources on core military essential billets and contracting the workload for the non-essential billets, such as Endodontists.

Section B of this chapter will discuss the literature review briefly: the methodology and criteria used for the analysis will be in Section C that will include alternatives chosen for this CBA; the current structure of costs for active duty and private practice Endodontists; potential cost avoidance if outsourcing is selected; the cost comparisons of each alternative; and concluding with findings and recommendations derived from this analysis.

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[89] Former Surgeon General of the Navy, "Defense Subcommittee Hearing on Medical Programs Testimony," 2004, http://appropriations.senate.gov/hearmarkups/record.cfm?id=220818/ [28 April 2004].

[90] LCDR Kurt Houser, Medical Service Corps, United States Navy, Dental Corps Officer Community Manager, Navy Personnel Command (NAVPERSCOM). Information given via email in January 2006.

[91] Former Surgeon General of the Navy, "Defense Subcommittee Hearing on Medical Programs Testimony," 2004, http://appropriations.senate.gov/hearmarkups/record.cfm?id=220818/ [28 April 2004].

[92] LT Rodney Wilson, Dental Programs Coordinator, Naval Education and Training Command (NMETC).

B. LITERATURE REVIEW

The National Defense Authorization Act (NDAA) of 2001 directed the Secretary of Defense (SECDEF) to conduct a review specifically on the current adequacy of special pays and bonuses for health care officers in the Navy. Two major studies followed: "Life-Cycle Costs of Selected Uniformed Health Professions" and "The Health Professions' Retention-Accession Incentives Study (Phases II & III: Adequacy of Special Pays and Bonuses for Medical Officers and selected other Health Care Professionals." Both studies were conducted by the Center for Naval Analyses (CNA).

Both of these studies show the current civilian – military pay gaps for dentists, but more specifically for dental specialists. This particular CNA study[93] found an existing $87,000 difference on average in pay for most specialists. Because of this, the study also recommends increasing ASP by 20%, VSP by 25%, and DOMRB by 43%, as well as implementing higher accession bonuses and other recruiting incentives.[94]

In addition, this particular study[95] recommends a $15,000 increase of the current ASP. Currently, the ASP is divided into three groups; < 3 years of service (YOS), > 3 but < 10 YOS, and > 10 YOS. If the recommended changes as proposed by the study are implemented, alternative one would look like this:

- < 3 YOS – The current $4,000 would become 19,000
- > 3 but < 10 YOS – The current $6,000 would become $21,000
- > 10 YOS – The current $15,000 would become $30,000

If the increases above were to be implemented, this would increase the cost savings for the Navy even more if the outsourcing option is utilized as shown in the comparison from the CBA that will be revealed further along in the Chapter.

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[93] Center for Naval Analyses (CNA), *The Health Professions' Retention-Accession Incentives Study (Phases II & III: Adequacy of Special Pays and Bonuses for Medical Officers and selected other Health Care Professionals)*, (Alexandria, Virginia: 2002), 113.

[94] Ibid, 145-156.

[95] Center for Naval Analyses (CNA), *The Health Professions' Retention-Accession Incentives Study (Phases II & III: Adequacy of Special Pays and Bonuses for Medical Officers and selected other Health Care Professionals)*, (Alexandria, Virginia: 2002), 113.

Thus far, Navy Medicine has converted 1,772 non-essential active duty billets to civilian or contract positions during FY05[96]; not all were dental specific however. Studies suggest that this conversion will affect 5,415 non-essential shore based billets as identified by The Total Health Care Support Readiness Requirement (THCSRR).

This shift in resource allocation or "transformation" initiated in 2001 by Defense Secretary Donald Rumsfeld is designed to lead toward a more effective and efficient DoD. Navy Medicine's manpower and resource management experts have been working with representatives from the Medical, Dental, Medical Service, Nurse and Hospital Corps Chiefs/Director's offices, and the Center for Naval Analyses (CNA) to develop the economic analyses needed to support and inform a better human capital strategy. In addition to the 1,772 military to civilian conversions in FY05, Navy Medicine successfully integrated Dental Treatment Facilities (DTFs) with the Medical Treatment Facilities (MTFs) and merged all Dental Technician's with Hospital Corpsman into a single rate.

These initiatives are very much in line with the Navy's human resource philosophy, which includes maximizing civilian and contract personnel in non-essential positions. The conversion of these positions will help alleviate the stress that has been put on the operating forces and ensure that military personnel are used to perform the tasks that are military essential.[97] Furthermore, the PBD 712 also states that increased operational tempo of the U. S. forces and current fiscal constraints requires the DoD to take maximum use of its human resources and to ensure that military personnel are used to perform tasks that are specifically, "military essential."[98]

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[96] Program Budget Decision (PBD) 712, *Military to Civilian Conversions*, directed that a total of 20,070 DoD-Wide military positions be converted to civilian positions between FY04 and FY05. The Navy's Defense Health Program was directed to convert a total of 1,772 military billets as part of the total 20,070 conversion target

[97] Former Surgeon General of the Navy, "Defense Subcommittee Hearing on Medical Programs Testimony," 2004, http://appropriations.senate.gov/hearmarkups/record.cfm?id=220818/ [28 April 2004].

[98] Program Budget Decision (PBD) 712 (2003). *Military to Civilian Conversions*, Department of Defense, Washington, DC.

C. METHODOLOGY

The thesis will now analyze whether the Dental Corps should continue to maintain the (base case) of recruiting general dentists for the purpose of retaining them beyond their initial obligation and train them in a postgraduate residency. The alternative is to hire civilian contractors that are already trained, licensed and presently practicing within a given specialty, such as endodontics. If Navy Medicine acts on the alternative proposal, it will not only be able to shrink the civilian-military pay gap for dentists, but also on the cost comparison differences of active duty and potential contractor pay that is proposed in this thesis. So, which direction should they take?

This analysis evaluated the differences in benefits and costs between the base case and the alternative. It also conducted a thorough review of current structure costs for both active duty and contracting costs for private practice Endodontists.

1. Alternatives

This CBA compared two alternatives on the basis of benefit and cost. The alternatives that were compared are as follows:

- Alternative 1: The Naval Dental Corps continues to recruit uniformed general dentists for the purpose of retaining them beyond initial obligation for training as Endodontists.
- Alternative 2: Hire civilian contract workers that are already trained, licensed and presently practicing as Endodontists.

Alternative 1: The Dental Corps recruits uniformed dentists through programs such as; the Health Professions Scholarship Program (HPSP), the Health Services Collegiate Program (HSCP), the Armed Forces Health Professions Scholarship Program (AFHPSP), Direct Commission, Inter-Service Transfer and Recall to active duty. Currently, in addition to the above programs, the Navy has added the following incentives as well. The Advanced General Dentistry Program (AGDP), the Financial Assistance Program (FAP), the Health Professions Loan Repayment Program and the accession bonus.

The Navy has also used the following direct monetary incentives to retain dentists: Additional Special Pay (ASP), Variable Special Pay (VSP), the Dental Officer Multiyear Retention Bonus (DOMRB), Board Certification Pay (BCP) and the one time Critical Skills Retention Bonus (CSRB). Other incentives include General Dental Education opportunities in addition to health care and retirement benefits.

Alternative 2: Contract for civilian trained and licensed Endodontists to fill the non-essential shore-based endodontic billets. Per the guidelines in the OPNAVINST 1000.16J "Manual of Navy Total Force Manpower Policies and Procedures" and the PBD 712, Navy Medicine has already begun doing this. The OPNAV manual (p.3) states "Manpower Claimants shall identify manpower requirements as civilian unless justified as military essential. Manpower Claimants shall rely on contractors to resource any new function not identified as military essential."

The methodology used in this project for comparing alternatives is generally consistent with the Office of Management and Budget (OMB) Circular No. A-94, which provides specific guidelines for CBAs. According to the Circular, CBAs "should be performed to promote efficient resource allocation through well-informed decision-making."[99] In particular, CBAs are part of the process for determining whether to outsource assets (as is proposed in this thesis). The analysis should be explicit about underlying assumptions, their rationale, and an assessment of their strengths and weaknesses. Key data and results should be transparent and promote independent analysis and review. In addition, post implementation verification should be performed to determine whether anticipated benefits and costs have been realized and whether improvements are needed for future estimates of benefits and costs.

Generally speaking, the foundation of a CBA is as follows: (a) the Return on Investment (ROI) = Net Present Value (NPV) of (Benefits – Costs), (b) Benefits = Dollar value of improved readiness, retention, recruiting, distribution, etc. resulting from the

[99] Office of Budget and Management (OMB). (1992). *Circular A-94: Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs.* Retrieved 13 October 2005 from the OMB Web site: http://www.whitehouse.gov/omb/circulars/a094/a094.html

policy or program in question over a stated horizon, and (c) Costs = Monetary (and dollar value of non-monetary) costs of implementing the policy or program over the same horizon.

Estimating the program costs for the proposed policy of contracting Endodontists is straightforward. The formula is [new pay/pay level] * [the number of Endodontists interested]. In this analysis, costs will consider unit costs for each contracted Endodontist. This will be compared to the existing costs for each active duty Endodontist under the current pay structure. The benefits for outsourcing are based on reducing costs of recruiting, training, transferring, providing retirement and retiree health benefits at a constant level of readiness. Furthermore, using contractors in non-essential shore-based billets will allow the Dental Corps to utilize the active duty dentists in military essential billets per the guidelines of the OPNAV 1000.16J and the PBD 712.

2. Current Pay Structure

The basics of the current structure costs used in this analysis are as follows: (a) accession bonuses, (b) training, (c) stipends, salary and special pays, (d) benefits, (e) recruiting and moving, (f) temporary duty and (g) pension and retiree health care.

a. Accession Bonus: The accession bonus is a one-time $30,000 entitlement used as a recruiting incentive. To be eligible, the individual must execute a written agreement to accept a commission as an officer of the Dental Corps, be designated as a dental officer, and to serve on active duty for a period of not less than four years.[100]

b. Training: Retention incentive offered to active duty dentists to attend a two year In-House or Out-Service postgraduate residency such as endodontics. The estimated cost for an endodontic two year In-House postgraduate residency is $653,812.[101]

[100] Department of Defense, *Financial Management Regulation Military Pay Policy and Procedures-Active Duty and Reserve Pay*, DoDFMR 7000-14R, Volume 7A, Chapter 6 (Washington DC: 2002), 6.

[101] Center for Naval Analyses (CNA), *Life-Cycle Costs of Selected Uniformed Health Professions (Phase I: Cost Model Methodology)*, (Alexandria, Virginia: 2003), 69.

c. Stipends, Salary and Special Pays: Additional pay offered to active duty dentists as retention incentives. The estimated cost is $125,280 on average per dentist per year.[102]

d. Benefits: Various retention incentives offered to active duty dentists that were [structured] by this CNA study. The estimated average cost is $17,712 per dentist per year.[103]

e. Recruiting and Moving: Initial costs for recruiting each active duty dentist plus additional moving costs for each PCS throughout one's career. The estimated costs are $61,145 one time recruiting cost per dentist and $4,169 for each PCS per dentist per year (Most dentists average a minimum of seven PCS moves in a 20 year career, totaling $29,183).[104]

f. Temporary Duty (TAD): Costs associated with miscellaneous collateral duties required by active duty dentists. The estimated average cost is $2,250 per dentist per year.[105]

g. Pension and Retiree Health Care: The estimated average costs are $35,653 per dentist per year.

[102] Center for Naval Analyses (CNA), *Life-Cycle Costs of Selected Uniformed Health Professions (Phase I: Cost Model Methodology)*, (Alexandria, Virginia: 2003), Appendix D-13.

[103] Ibid.

[104] Center for Naval Analyses (CNA), *Life-Cycle Costs of Selected Uniformed Health Professions (Phase I: Cost Model Methodology)*, (Alexandria, Virginia: 2003), Appendix D-13.

[105] Ibid.

If Navy Medicine were to implement the proposed contractor alternative, major costs in the current structure could be avoided. They are as follows:

- Accession Bonus ($30,000 one time)
- Two year In-House postgraduate residency ($653,812)
- Stipends, Salary and Special Pay ($125,280)
- Benefits ($17,712 per year)
- Recruiting ($61,145 one time)
- Moving ($4,169 for each PCS)
- Pension and Retiree Health Care ($35,653 per year)

Note: Costs are averaged per one active duty dentist and the income figures are trended to 2005 dollars using the Consumer Price Index.[106]

The total savings is potentially $927,771 per billet filled by an endodontic contractor. These benefits for outsourcing are based on reducing costs of recruiting, training, transferring active duty personnel, pension, retiree health care costs and other pays and benefits (due to a smaller active duty Corps of dentists and assuming a constant level of readiness). The cost savings from the example above can then be applied toward the contractor's salary and still save the Navy money on an annual basis. This additional savings could be used for increasing the bonuses and special pays needed for retaining the military essential specialties as will be described further on in the Chapter.

3. Findings

This analysis used cumulative total costs over a 10-year period for a direct-accessed general dentist who was trained as an Endodontist while on active duty. This means the costs accumulated from recruiting a direct accessed Lieutenant (O-3) up until the 10-year mark as a Lieutenant Commander (O-4). The costs from the CNA study referenced[107] do not include the two year In-House postgraduate residency, so this analysis will add that to the cumulative costs. The cumulative total costs over the 10-year

[106] Center for Naval Analyses (CNA), *Life-Cycle Costs of Selected Uniformed Health Professions (Phase I: Cost Model Methodology)*, (Alexandria, Virginia: 2003), Appendix D-13.

[107] Ibid.

period are $1,391,211 and the two year postgraduate In-House residency costs are $653,812 totaling $2,045,023 per active duty Endodontist. This averages to $204,502 annually for a 10-year period. The costs are referenced from the CNA study on Appendix D-13 for a direct accessed, comprehensively trained dentist with 10 years of service. However, note that the costs referenced in the study are the same for dentists whether they were trained in orthodontics, comprehensive, endodontics or periodontics. In addition, costs are averaged per one active duty dentist and the income figures are trended to 2005 dollars using the Consumer Price Index. The study referenced used this process, so this study wanted to maintain the same continuity.

This analysis also used salaries from the American Dental Association (ADA)[108] to compare active duty dentists to civilian counterparts as accurately as possible with the most recent, accurate and reliable data available. The analysis averaged general dentist salaries for the first six years and then averaged the remaining four years for a specialty-trained dentist in private practice. The ADA does not specifically use Endodontists or any other specialty, only "Specialists". This was in order to maintain continuity with the active duty dentist. The general dentist salary used for the first six year period is $881,880 and the remaining four years as a specialist is $940,000 totaling $1,821,880. The averages for the contractor are $146,980 annually the first six years, and $235,000 the remaining four years for the proposed 10-year period. The overall average salary for the 10-year period totals $182,188, which is a $223,143 savings in cost for the 10-year period favoring the contractor alternative.

As referenced on Pg. 50 of Chapter IV, the A-76 guidelines state that a contractor's proposal must meet a minimum cost differential in order for outsourcing to be considered cost effective: 10 percent, or $10 million (whichever is less). In the case of outsourcing for Endodontists, the differential used would be 10 percent. That said, the savings of $223,143 for the 10-year period of outsourcing for Endodontists is above the 10 percent differential as required by the A-76 guidelines.

[108] American Dental Association (ADA), *The 2003 Survey of Dental Practice: Income from the Private Practice of Dentistry*, (Chicago, Illinois: 2003), 13.

Table 6. Cost Comparisons

Cost Comparisons for **active duty**	Cumulative Cost for 10-year period = $1,391,211	Two Year In-House residency cost = $653,812	Total Costs = **$2,045,023** Average annual costs = **$204,502**	
Cost Comparisons for **contractor**	General Dentist salary for first six years = $881,880 Average annual salary = $146,980	Endodontist (Specialist) salary for remaining four years = $940,000 Average annual salary = $235,000	Total Salary = **$1,821,880** Overall average salary = $182,188	A savings of **$223,143** over the 10-year period to the Navy

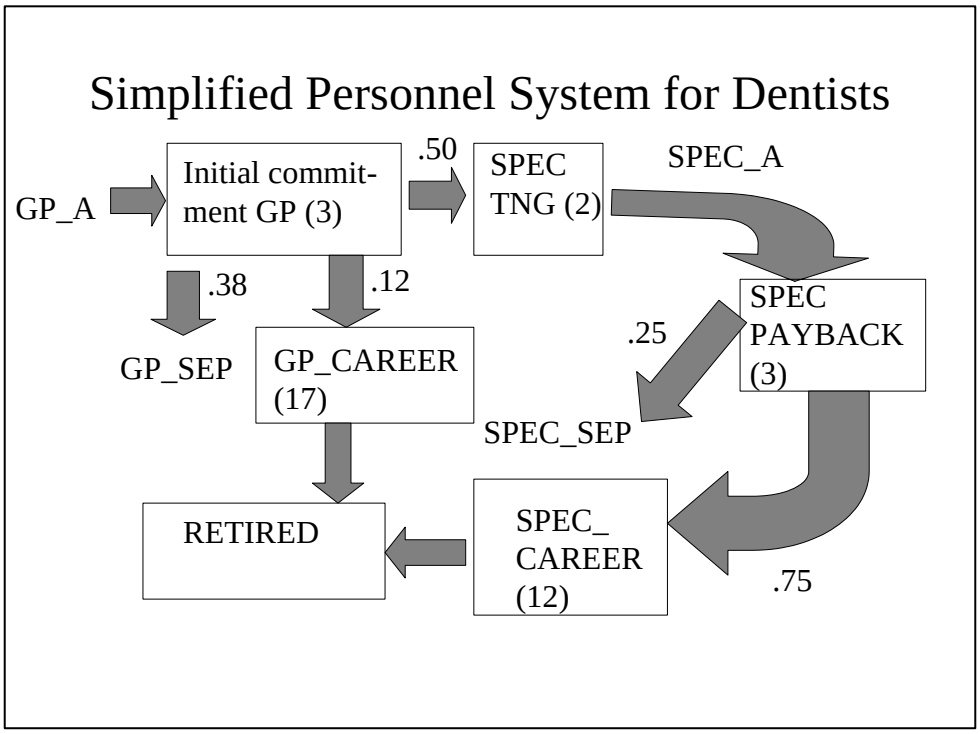
Note that the data taken from the ADA for general dentist salary was for five – nine years following graduation from dental school and the specialist salary used was for 10 – 14 years following graduation. This was necessary because the ADA states that surveys for the general dentist salaries for less than five years, and specialty salaries for less than 10 years was not possible due to volumes of unreliable responses.[109]

Findings from the comparisons reveal a savings of $223,143 to the Navy over a 10-year period if choosing to contract an already licensed and trained Endodontist, as long as the pay steps are increased in the manner composed within this analysis. Also, if the ASP were to be increased by $15,000 as proposed by the CNA study earlier in the chapter on page 56, it could potentially be an additional savings of $427,143 over the same 10-year period if the contractor alternative is used. This would be gained by adding $19,000 * 3 ($57,000) for < 3 YOS + $21,000 * 7 ($147,000) for > 3 but < 10 YOS to the initial savings of $223,143 per each active duty dentist not recruited.

[109] American Dental Association (ADA), *The 2003 Survey of Dental Practice: Income from the Private Practice of Dentistry*, (Chicago, Illinois: 2003), 13.

In addition, this analysis has included a steady-state model to show a simplified personnel system for Dentists as shown in the table below.

Table 7. Simplified Personnel System for Dentists



This is a simplified dentist personnel system representation, with active duty only. For this discussion, we assume steady state flow; i.e., entries and exits into all boxes are equal for any given year.

DISCUSSION: GP_A is number of active duty dentists entering initial service. At the end of the initial commitment (3 yrs), some dentists (GP_SEP, 38%) separate; some (GP_CAREER, 12%) elect to stay on active duty as GP dentists; some (SPEC_A, 50%) enter specialist training programs. Following specialty training, some dentists (SPEC_SEP, 25%) separate; some remain for the rest of their careers as specialists (SPEC_CAREER, 75%). Following an assumed 20 years of service as practitioners, all career dentists enter the retired population.

With the percentages above, we can calculate relative proportions.

GP_SEP = .38*GP_A

GP_CAREER = .12*GP_A

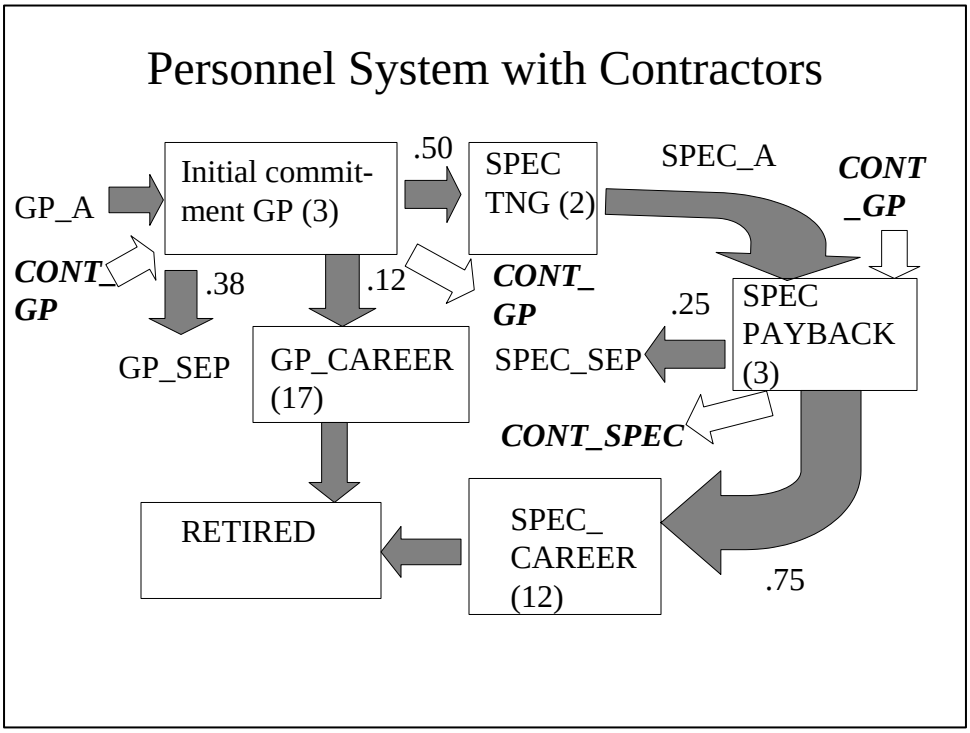
SPEC_A = .50*GP_A

SPEC_SEP = .25*SEP_A = .125*GP_A

SPEC_CAREER = .75*SEP_A = .375*GP_A

Also, this analysis included the same steady-state model shown above with contract dentists added revealed below.

Table 8. Personnel System with Contractors



This is a representation of the same system with contract dentists added. Assume the contracted dentists have three-year terms of employment.

CONSEQUENCES with assumed flow are as follows. Services: Each accessed dentist (GP_A) results in 5.04 years of GP service on average. (.50*3+.38*3+.12*20). Each accessed dentist also provides an average of 6.00 years of specialty service

(.50*.25*3+.50*.75*15). Using average service provided, we can reduce GP_A by one if we hire 1.68 GP contractors and 2.00 specialist contractors.

Costs and Services by Category:

GP_SEP = 3 years of junior officer bonuses, salary and special pays (3 yrs GP service)

GP_CAREER = 20 years of bonuses, salary, and special pays plus retirement (20 yrs GP service)

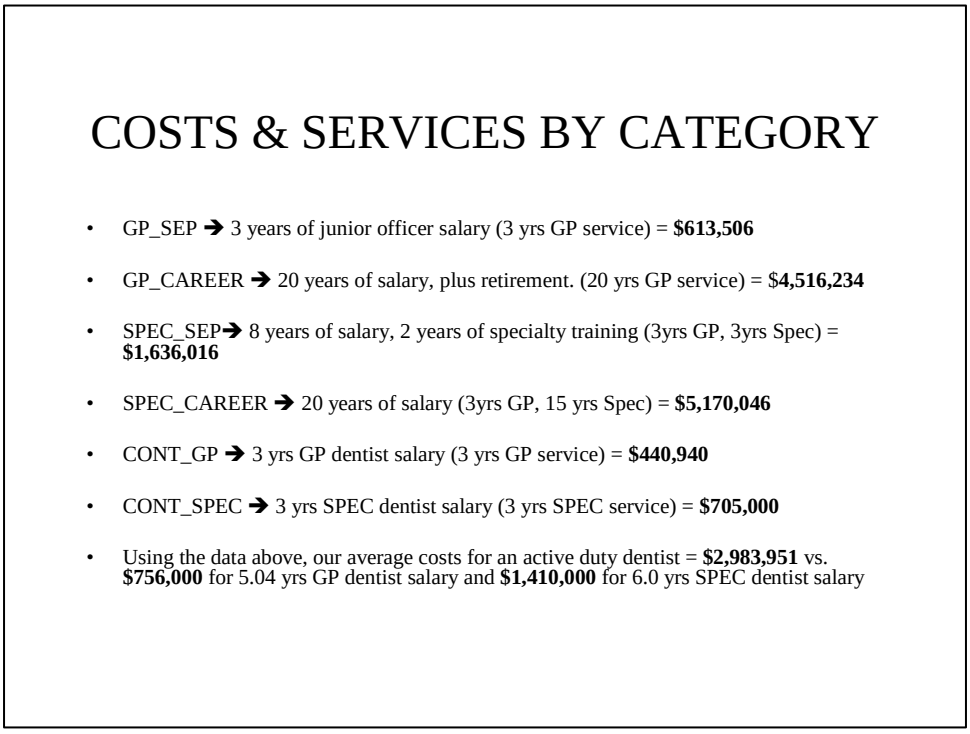
SPEC_SEP = 8 years of bonuses, salary, and special pays plus 2 years of specialty training (3 yrs GP, 3 yrs Spec)

SPEC_CAREER = 20 years of bonuses, salary, and special pays plus retirement (3 yrs GP, 2 yrs training, 15 yrs Spec)

CONT_GP = 3 years of GP dentists salary (3 yrs GP service)

CONT_SPEC = 3 years of dental specialist salary) 3 yrs SPEC service)

Table 9. Costs and Services by Category


COSTS & SERVICES BY CATEGORY
• GP_SEP ➔ 3 years of junior officer salary (3 yrs GP service) = $613,506
• GP_CAREER ➔ 20 years of salary, plus retirement. (20 yrs GP service) = $4,516,234
• SPEC_SEP➔ 8 years of salary, 2 years of specialty training (3yrs GP, 3yrs Spec) = $1,636,016
• SPEC_CAREER ➔ 20 years of salary (3yrs GP, 15 yrs Spec) = $5,170,046
• CONT_GP ➔ 3 yrs GP dentist salary (3 yrs GP service) = $440,940
• CONT_SPEC ➔ 3 yrs SPEC dentist salary (3 yrs SPEC service) = $705,000
• Using the data above, our average costs for an active duty dentist = $2,983,951 vs. $756,000 for 5.04 yrs GP dentist salary and $1,410,000 for 6.0 yrs SPEC dentist salary

Note that the figures used with the Cost Benefit Analysis earlier in the chapter were used in this model as well. GP_CAREER & SPEC_CAREER include in the calculation a conservative estimate of 30 years retirement pay in addition to the 20 years of salary. We can then average costs for an accessed active duty dentist vs. the contractor equivalent using the figures above. This results in $2,983,951 for an active duty dentist and $2,166,000 for a contracted dentist, a savings of $817,951 or about 27%. Furthermore, note that contractor pay can be adjusted within a given fiscal year by the command comptroller, unlike government service (GS) counterparts in the same billet. This option is also a very convenient method for awarding bonuses, pay raises, and so forth.

Listed below are the immediate benefits resulting if the proposal is implemented:

- $927,771 cost savings per active duty dentist not recruited
- Assist [in justifying to Navy Medicine] the conversion of a portion of the remaining 3,600 or so active duty billets to civilian or contract as mandated by the PBD 712
- Improved readiness and retention for Medical Treatment Facilities
- Close the gap on the civilian-military difference in pay for the needed active duty essential dental specialty billets by increasing the bonuses and specialty pays from the cost savings indicated. Thereby, decreasing the loss rate and increasing retention for both the essential and non-essential billets.

4. Recommendations

This analysis recommends using the funds saved from recruiting less uniformed general dentists as indicated in the Findings Section above on:

- Retaining the necessary military essential uniformed dentists the Navy needs on active duty by increasing the bonuses and specialty pays as recommended by the CNA studies referenced previously in the chapter
- Contract civilian Endodontists for non-essential billets at all CONUS shore-based Medical Treatment Facilities

If Navy Medicine follows the guidelines as set forth in the OPNAVINST 1000.16J and the PBD 712, and retains the required amount of uniformed dentists as directed by the Mission, Functions, and Tasks Statement, the following should occur:

- The Return on Investment (ROI) from the policy proposal combined with the recommended pay structure changes would be cost-effective as presented in the Findings Section
- The benefits from contracting are based on reducing costs of recruiting, training, transferring active duty personnel, pension and retiree health care costs (due to a smaller active duty Corps of dentists and assuming a constant level of readiness). The cost savings from avoiding the benefits above can then be applied toward the contractor's salary and still save the Navy money on an annual basis. This additional savings could be used for increasing the bonuses and special pays needed for retaining the military essential specialties
- Based from the results, it appears that the higher the number of non-essential shore-based billets filled by contractors, the higher the savings
- Recommend evaluating one year following the implementation of this proposal for cost effectiveness

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VI. CONCLUSIONS AND RECOMMENDATIONS

A. OVERVIEW

The total amount of special pay received by Navy dentists has remained essentially unchanged since Fiscal Year 1980. As a result, the total pay of Dental Corps paygrades has increased at a slower rate than the cost of living. This has caused the annual loss rate to increase as well as to contribute to a significant drop in the graduate dental education residencies. The Navy relies heavily on this group of officers to fill the operational billets at sea, in addition to supporting the United States Marine Corps and Medical Treatment Facilities overseas.

Several studies have shown that the current pay for dentists is not attractive enough to recruit or retain the amount of dentists that the Navy will need as stated in the Mission, Functions, and Tasks Statement. These results indicate increasing bonuses and specialty pay for the active duty military essential billets. Increasing the size of the bonuses and specialty pays can help the Navy meet operational requirements and save money at the same time. The Navy could then adjust the bonuses and pays to meet the requirement needed, thus providing an additional force-shaping tool. The Navy could then recruit the dentists needed for military essential billets and use the saved money for contracting the non-essential shore-based specialties, such as endodontics (as proposed in this analysis).

B. CONCLUSIONS

Based on the findings from this analysis, the following Dental Corps policy recommendations are suggested:

Referenced studies used throughout this analysis suggest exploring the feasibility of recruiting already-licensed dentists to meet the mission of the Navy. Additionally, the same studies show low retention of general dentists remaining past their initial service obligation commitment. This suggests that retention might be improved for the military essential billets by expanding efforts to recruit currently-licensed and more mature

dentists with subspecialties. Pursuing currently-licensed dentists with subspecialties as contractors for our non-essential billets, such as Endodontists seems feasible, and cost-effective.

Additionally, contracting should be used as a complement to uniformed dentists. The intent would not be an attempt to "replace" the uniformed dentists. The (base case) here is recruiting general dentists for the purpose of retaining them beyond their initial obligation to train them in a postgraduate residency. The alternative proposed is to hire civilian contractors that are already trained, licensed and practicing within a given specialty, such as endodontics. The findings indicate using some combination of both. In order to mitigate shortages, the Navy should allocate resources to retain military essential uniformed dentists by increasing the bonuses and special pays (as recommended by the studies referenced previously). Contracted civilian endodontists for non-essential billets at shore-based Military Treatment Facilities could at the minimum help fill remaining personnel gaps.

C. POTENTIAL AREAS FOR FURTHER RESEARCH

The following are potential areas for future research recommendations:

1. Extend this analysis to other non-essential shore-based specialties. Based on the results of this analysis, it appears there are potential savings in outsourcing other specialties.

2. Expand this study and take a more systemic view of the dental career field and the dental services that are provided in the Navy. Are services such as Public Health Dentistry for example still necessary and if so, do we need an active duty dentist to perform the requirement?

3. Based on the concerns relating to manning shortages at the junior and mid-grade levels, an extensive retention survey would be recommended to identify factors in predicting officer retention characteristics. A good reference for this would be the Navy Nurse Manpower Management Model by the Defense Resources Management Institute.

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